ROBO-8714VG2A

Single Board Computer

User's Manual

P/N: B8980080 Version 1.0

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How to Use This Manual

The manual describes how to configure your ROBO-8714VG2A system to meet various operating requirements. It is divided into five chapters, with each chapter addressing a basic concept and operation of Single Board Computer.

Chapter 1 : System Overview. Presents what you have in the box and give you an overview of the product specifications and basic system architecture for this series model of single board computer.

Chapter 2 : Hardware Configuration. Shows the definitions and locations of Jumpers and Connectors that you can easily configure your system.

Chapter 3 : System Installation. Describes how to properly mount the CPU, main memory and Compact Flash to get a safe installation and provides a programming guide of Watch Dog Timer function.

Chapter 4 : BIOS Setup Information. Specifies the meaning of each setup parameters, how to get advanced BIOS performance and update new BIOS. In addition, POST checkpoint list will give users some guidelines of trouble-shooting.

Chapter 5 : Troubleshooting. Provides various useful tips to quickly get ROBO-8714VG2A running with success. As basic hardware installation has been addressed in Chapter 3, this chapter will basically focus on system integration issues, in terms of backplane setup, BIOS setting, and OS diagnostics.

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EC Declaration of Conformity
(To Be Added)

For the following equipment:

Product Name:

Model Name:

Trade Name:

is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility Directive (89/336/EEC). The equipment was evaluated and passed the test, the following standards were applied :

EMC :	EN 55022	(1994/A1:1995 Class A)
	EN 50082-2	(1991)
	EN 61000-4-2	(1995)
	EN 61000-4-3	(1996)
	EN 61000-4-4	(1995)
	EN 61000-3-2	(1995)
	EN 61000-3-3	(1995)

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(Company Name)

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(Company Address)

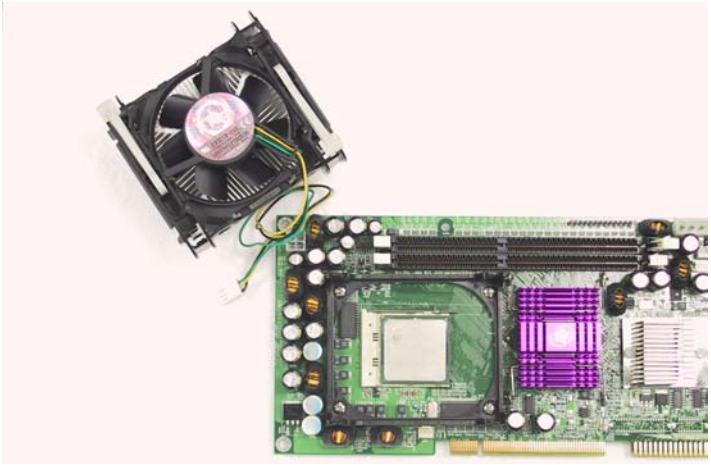
Taipei, R.O.C.	_____	_____
Place	Date	Legal Signature of Authorized Person

WARNING

■ Remove Processor

Caution: Do not pull out processor without opening socket handle!

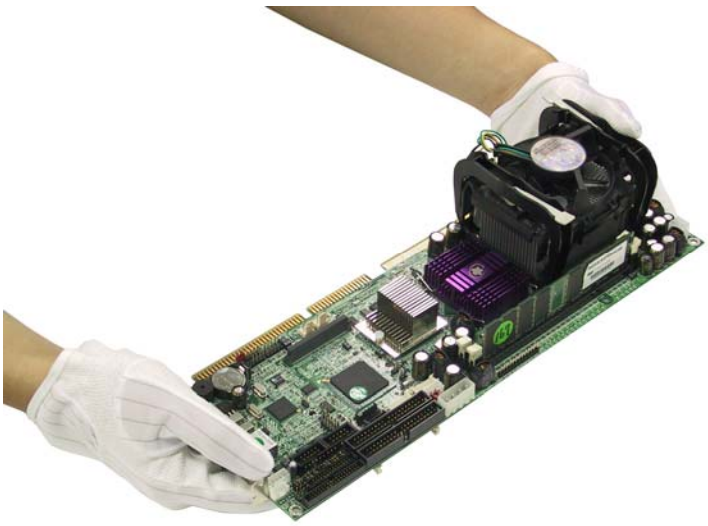
- High viscosity thermal grease between processor and cooler will lead the processor be pulled out from socket when taking cooler off.
- This action may damage processor socket, which will cause poor contact between CPU & socket.



■ Handling SBC

Caution: Do not just hold any single side of the SBC; hold evenly on both sides!

- Heavy processor cooler shall bend the SBC when SBC being held just on one side.
- The bending may cause serious soldering or circuit damage.



Chapter 1
System Overview

1.1 Introduction

Performance, flexibility and longevity are major reasons that you fall in love with ROBO-8714VG2A. The single board computer supports all front side bus of socket 478 P4 & Celeron (D) processor, of course the highest one – 3.4GHz. Parallel with the strongest processor, ATI's mobility M9 is the boosted engine of graphics. AGP 4X interface graphics controller embedded 64MB video memory provides many display interfaces such as CRT, LVDS, DVI and TV with outstanding display resolution and saturated color. More than that, ROBO-8714VG2A is infused with dual Gigabit Ethernet port, dual SATA port, 64-bit PCI & ISA bus expansion capability.

Intel 875P and 6300ESB is the chipset that ROBO-8714VG2A adopts. The 875P not only supports 800MHz FSB processor but also features DDR 400 dual channel ECC memory and CSA (Communication Streaming Architecture). One Gigabit Ethernet port works on the CSA interface which is double bandwidth of traditional PCI bus. The second Gigabit Ethernet port that relies on PCI interface also presented higher performance since it is the only one device on PCI bus.

64-bit PCI expansion bus is extended from the second expansion bus of 6300ESB that support both 32-bit/33MHz as well as 64-bit/66MHz PCI bus with proper 32-bit and 64-bit backplane. Higher I/O bandwidth of dual Gigabit Ethernet, 64-bit/66MHz PCI expansion, AGP 4X graphics and 800MHz Pentium 4 processor, together with storage interfaces, IDE, SATA, CompactFlash, USB, Floppy, Serial and Parallel port constructed a mighty engine of computing platform.

Longevity is a very important factor that customers have to choose this board since Intel 875P is the only one chipset in IPD that supports 800MHz FSB Pentium 4 processor. If your project need long development period or product life cycle and constrained thermal issue, ROBO-8714VG2A definitely the only one and it is the best one of your chooses.

ROBO-8714VG2A can be used in medical application such as X-ray machine as result of its best display quality and data transmission throughput via Gigabit Ethernet. It can also be adopted by automation application that applies 64-bit/66MHz I/O acquisition and storage cards.

1.2 Check List

The ROBO-8714VG2A package should cover the following basic items:

- ✓ One ROBO-8714VG2A single board computer
- ✓ One dual Serial ports cable kit
- ✓ One Parallel port cable kit
- ✓ One FDC cable
- ✓ One IDE cable
- ✓ One Y-cable cable for PS/2 keyboard and mouse
- ✓ One 4-pin ATX power control cable for backplane connection
- ✓ One 7-pin SATA signal cable
- ✓ One Installation Resources CD-Title
- ✓ One booklet of ROBO-8714 series manual

If any of these items is damaged or missing, please contact your vendor and keep all packing materials for future replacement and maintenance.

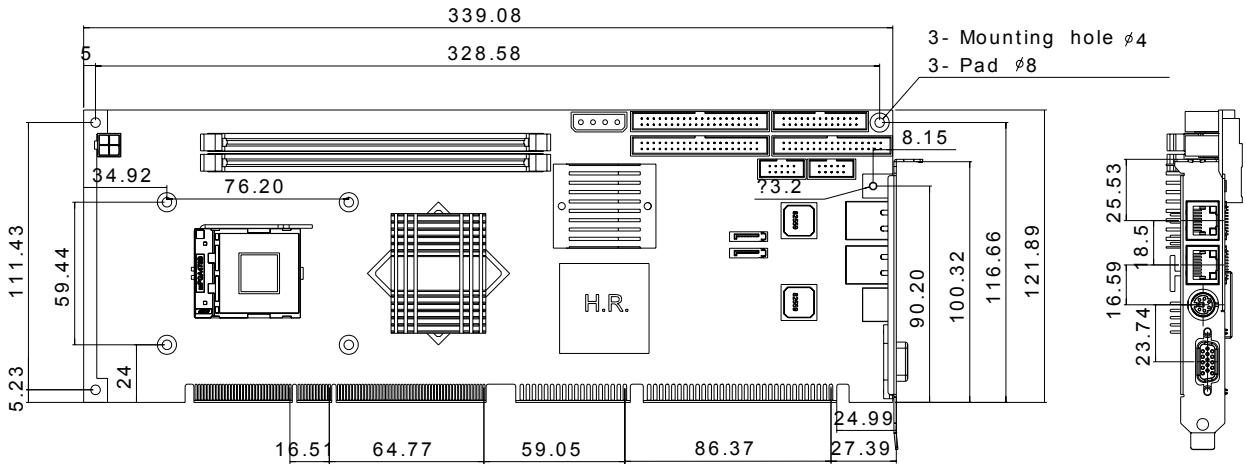
1.3 Product Specification

- **Main processor**
  - Intel® Pentium® 4/Celeron Processor
  - FSB: 800/533/400MHz
- **BIOS**
  Phoenix (Award) system BIOS with 4Mb Flash ROM with easy upgrade function ACPI, DMI, Green function and Plug and Play Compatible
- **Main Memory**
  - Support dual-channel & signal channel DDR, ECC memory interface
  - Two DIMM sockets support 266/333/400 DDR-SDRAM up to 2GB System Memory
- **L2 Cache Memory**
  Build in Intel® Pentium® 4/Celeron Processor
- **Chipset**
  Intel 875P MCH and 6300ESB chipset
- **Bus Interface**
  - Follow PICMG 1.0 Rev 2.0 standard (64-bit PCI and 16-bit ISA)
  - Fully complies with PCI Local Bus specification V2.2 (support 4 master PCI slots)
- **PCI IDE Interface**
  Support two enhanced IDE ports up to four HDD devices with PIO mode 4 and Ultra DMA/33/66/100 mode transfer and Bus Master feature

- **SATA Interface**
  Dual SATA port
- **Floppy Drive Interface**
  Support one FDD port up to two floppy drives and 5-1/4"(360K, 1.2MB), 3-1/2" (720K, 1.2MB, 1.44MB, 2.88MB) diskette format and 3-mode FDD
- **Serial Ports**
  Support two high-speed 16C550 compatible UARTs with 16-byte T/R FIFOs
- **IR Interface**
  Support one 6-pin header for serial Standard Infrared wireless communication
- **Parallel Port**
  Support one parallel port with SPP, EPP and ECP modes
- **USB Interface**
  Support four USB (Universal Serial Bus) ports for high-speed I/O peripheral devices
- **PS/2 Mouse and Keyboard Interface**
  Support one 6-pin Mini-DIN connector for PS/2 keyboard/mouse connection through Y-Cable separation and one 5-pin shrouded connector for PS/2 keyboard connection through backplane connection
- **ATX Power Control Interface**
  One 4-pin header to support ATX power control with Modem Ring-On and Wake-On-LAN function
- **Auxiliary I/O Interfaces**
  System reset switch, external speaker, Keyboard lock and HDD active LED, etc
- **Real Time Clock/Calendar (RTC)**
  Support Y2K Real Time Clock/Calendar with battery backup for 7-year data retention
- **Watchdog Timer**
  - Support WDT function through software programming for enable/disable and interval setting
  - Generate system reset
- **CompactFlash**
  - True IDE mode, compatibles with the ATA/ATAPI-4 specification
  - One Type II CF socket on secondary IDE channel for supporting up to 1GB memory
  - Bootable for no drives on primary channel
- **On-board VGA**
  - ATI-Mobility M9 graphic controller works in combination with a 64MB DDR-SDRAM
  - Support Dual channel LVDS interface
  - Support TMDS interface for DVI display
  - Support TV output

- **On-board Ethernet LAN**
  Dual Gigabit Ethernet controller to support two RJ-45 connectors on bracket
- **High ISA Driving Capability**
  Support 64mA high driving capability for multi-slots ISA-bus
- **High Driving GPIO**
  Support 8 programmable high driving GPIO
- **Cooling Fans**
  Support three 3-pin headers for CPU, System and Power fans
- **System Monitoring Feature**
  Monitor CPU temperature, system temperature and major power sources, etc
- **Bracket**
  Support dual Ethernet port, one Mini-DIN port for PS/2 keyboard/mouse, and one CRT port
- **Outline Dimension (L X W):**
  338.5mm (13.33") X 122mm (4.8")
- **Power Requirements:**
- **Configuration:**
  - +12V (CPU) @5.85A
  - +12V (System) @0.24A
  - +5V @3.83A
  - Test configuration:
    - CPU: Intel Pentium 4 – 2.8GHz/800MHz FSB/1024KB L2 Cache
    - Memory: DDR 512MB/PC3200
    - Primary Master IDE HDD: Seagate ST320423A
    - OS: Microsoft Windows 2000 Professional + SP4
    - Test Programs: Burning Test V4.0 for CPU loading
    - Connected Fans: Only CPU fan connected
    - Run Time: 30 minutes
- **Operating Temperature:**
  -5°C ~ 55°C (23°F ~ 131°F)
- **Storage Temperature:**
  -20°C ~ 80°C
- **Relative Humidity:**
  5% ~ 90%, non-condensing

1.3.1 Mechanical Drawing

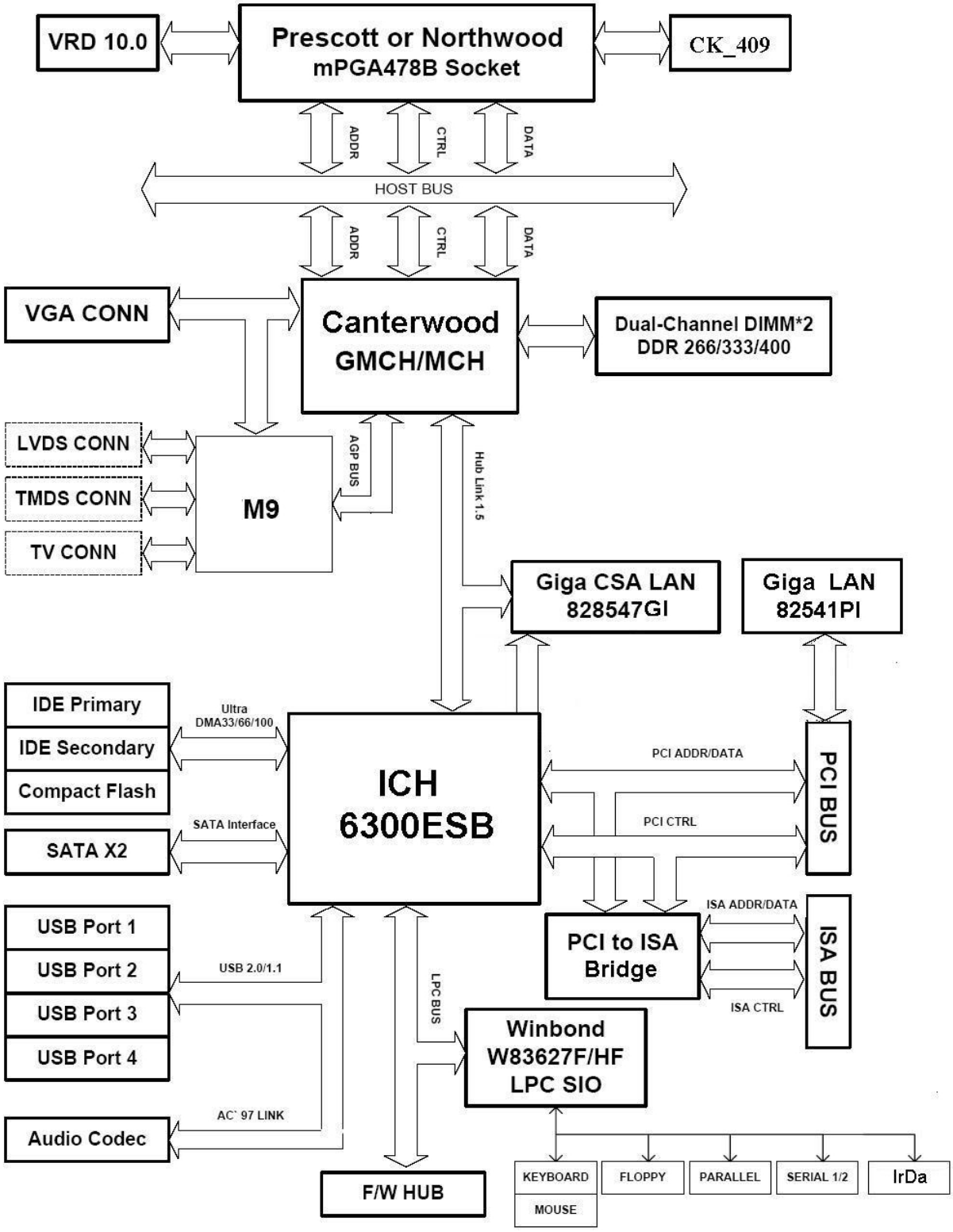


1.4 System Architecture

The system architecture of ROBO-8714VG2A includes two main Intel® chips - Intel 875P chipset supports Pentium-4 processor, DDR-SDRAM, 2D/3D graphic display, and 6300ESB that supports one PCI and one PCI-X bus (backward compatible with PCI bus) bus interface, APM, ACPI compliant power management, USB port, SMBus communication, SATA, and Ultra DMA/33/66/100 IDE Master. Super I/O chip W83627HF is responsible for PS/2 Keyboard/Mouse, UARTs, FDC, Hardware Monitor, Parallel, Watch Dog Timer and Infrared interface.

The LPC-to-ISA Bridge supports a standard 16-bit ISA bus interface that is applied for all slower I/O operations.

There is dual on-board Gigabit Ethernet via RJ-45 Port to support full functionality of ROBO-8714VG2A AIO SBC (All-In-One Single Board Computer). One Gigabit Ethernet controller builds on CSA (Communication Streaming Architecture) that is twice bandwidth than PCI bus and the second Gigabit controller builds on dedicated PCI bus that sharing with no other.

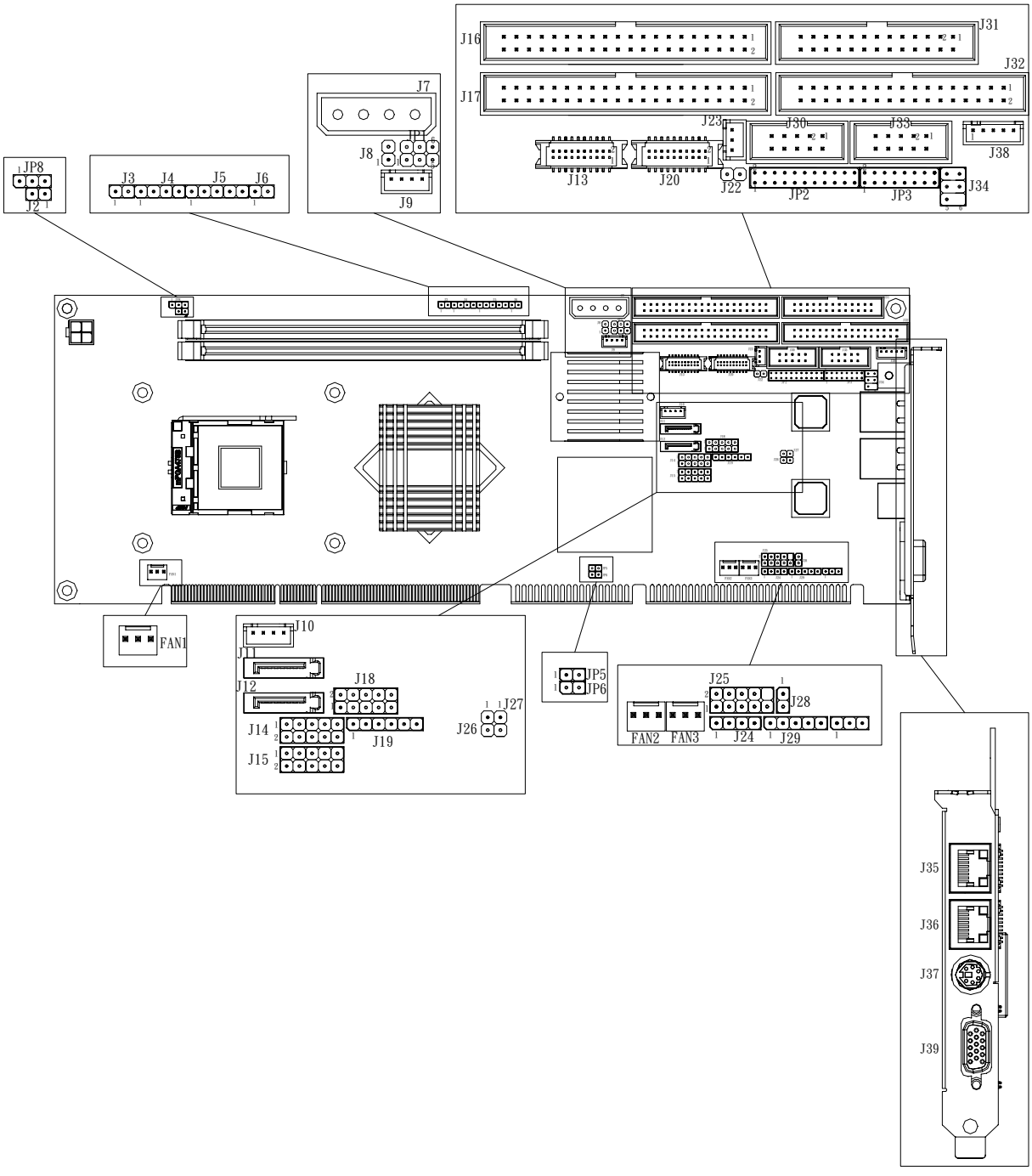


ROBO-8714VG2A System Block Diagram

Chapter 2
Hardware Configuration

This chapter gives the definitions and shows the positions of jumpers, headers and connector. All of the configuration jumpers on ROBO-8714VG2A is in the proper position. The default settings shipped from factory are marked with a star (★).

2.1 Jumper Setting



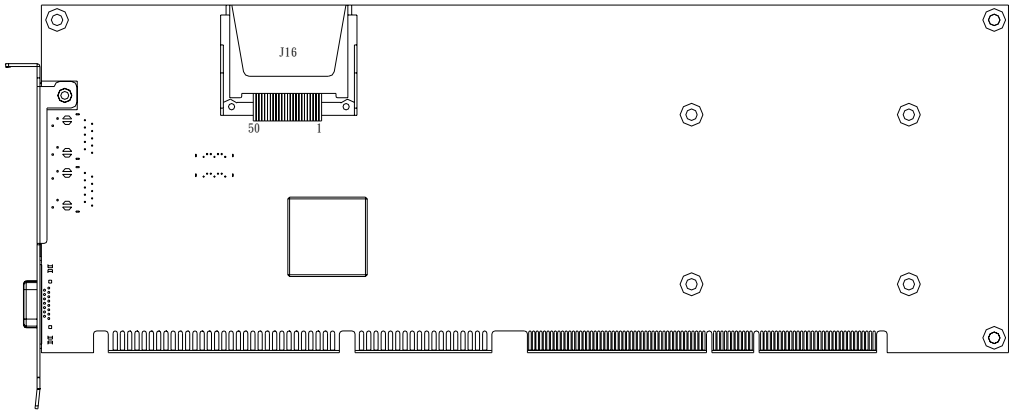


Figure 2-1 ROBO-8714VG2A Jumper/Connector Location

JP1: AT/ATX Power Selection

JP1	Function
1-3, 2-4 Short	AT Power
3-5, 4-6 Short	ATX Power ★

Note:
JP4 must be set 2-3 short first then Return 1-2 short to clear CMOS RAM if JP1 has been changed ever.

JP2: COM2 Interface Selection

JP2	Function
5-6,9-11,10-12,15-17,16-18 Short	RS-232 ★
3-4,7-9,8-10,13-15,14-16,21-22 Short	RS-422
1-2,7-9,8-10,19-20 Short	RS-485

JP3: LVDS Backlight-On Signal Selection (Pin 1~Pin 6)

JP3 (1~6)	Function
1-2, 4-6 Short	5V, Active Low
1-2, 5-6 Short	5V, Active High ★
1-3, 4-6 Short	12V, Active Low
1-3, 5-6 Short	12V, Active High

JP3: LVDS Panel Power (VDD) Selection (Pin 7~Pin 10)

JP3 (7~10)	Function
7-8 Short	5V
9-10 Short	3.3V ★

JP3: LVDS Resolution Selection (Pin 11~Pin 16)

JP3 (11~16)	Function
Pin 11-16 Open	LVDS Disable ★
11-12 Short	ID1 (1024*768, 18 Bits)
11-12, 13-14 Short	ID3 (1024*768, 36 Bits)
15-16 Short	ID4 (1024*768, 48 Bits)
11-12,15-16 Short	ID5 (1024*768,24 Bits)

Note:
Enable TMDS signal by setting LVDS disabled, Pin 11~ Pin 16 Open.

JP4: CMOS Clear

JP4	Function
1-2 Short	Normal Operation ★
2-3 Short	Clear CMOS Contents

JP5: PCI / PCIX select

JP5	Function
Open	PCIX ★
Short	PCI

JP6: PCI 33Mhz / 66 Mhz

JP6	Function
Open	66Mhz ★
Short	33Mhz

JP8: Watch Dog Reset

JP8	Function
1-2 Short	Reset button ★
2-3 Short	NMI

2.2 Connector Allocation

I/O peripheral devices are connected to the interface connectors on this single board computer.

Connector Function List

Connector	Description	Remark
J1	12V POWER Connector	
J2	NMI connector	
J3	Reset connector	
J4	External Speaker Connector	
J5	Power LED and Keyboard Lock Connector	
J6	Hard Disk Drive LED Connector	
J7	Standalone Power Connector	
J8	ATX Power button Interface	
J9	ATX Power Control Connector r	
J10	LVDS Panel Control Connector	
J11	Secondary SATA Connector	
J12	Primary SATA Connector	
J13	LVDS Panel Connector	
J14	USB1 and USB2 Connector	
J15	USB3 and USB4 Connector	
J16	Primary IDE Connector	
J17	Secondary IDE Connector	
J18	General Purpose I/O Connector	
J19	IrDA Connector	
J20	TMDS Panel Connect	
J21	External Thermal Sensor Connector	
J22	External Wake On Ring Connector	
J23	External Wake On LAN Connector	
J24	Audio CD-in Connector	
J25	Audio MIC/Line-in/Line-out Connector	
J26	External LAN2 Access LED Connector	
J27	External LAN1 Access LED Connector	
J28	Case-open Detection Connector	
J29	SMBus Connector	
J30	COM1 Serial Port 1 Connector	
J31	Parallel Port Connector	
J32	FDC Interface Connector	
J33	COM1 Serial Port 2 Connector	
J34	TV-out Connector	

J35	LAN1 Ethernet RJ-45 Connector	
J36	LAN2 Ethernet RJ-45 Connector	
J37	PS/2 Keyboard/Mouse Connector	
J38	External Keyboard Connector	
J39	On-board VGA CRT Connector	
J40	Compact Flash Card	
FAN1	FAN 1 (CPU FAN)	
FAN2	FAN 2 (POWER FAN)	
FAN3	FAN 3 (SYSTEM FAN)	

Pin Assignments of Connectors

J1: 12V POWER Connector

PIN No.	Signal Description
1	Ground
2	Ground
3	+12V
4	+12V

J2: NMI Connector

PIN No	Signal Description
1	NMI Signal Input (Active low)
2	Ground

J3: Reset Connector

PIN No	Signal Description
1	Reset Signal Input (Active low)
2	Ground

J4: External Speaker Connector

PIN No.	Signal Description
1	Speaker Signal Output (Open-drain w/ internal series 33 Ohm)
2	N/C
3	Ground
4	+5V

Note:
The pull-high voltage of external speaker is limited at 5V maximum.

J5: Power LED and Keyboard Lock Connector

PIN No.	Signal Description
1	+5VSBY(330 ohm pull-up for power LED+)
2	N/C
3	Power LED-
4	Keyboard Lock Signal Input (Active low)
5	Ground

J6: Hard Disk Drive LED Connector

PIN No.	Signal Description
1	+5V (300 ohm pull-up for HDD LED+)
2	HDD Active # (HDD LED-)

J7: Standalone Power Connector

PIN No.	Signal Description
1	+12V
2	Ground
3	Ground
4	+5V

Note:
To run system in standalone operation. Both J1 and J7 have to be connected.

J8: ATX Power button Interface

PIN No.	Signal Description
1	Pull-high 1K Ohm to +5VSB
2	Power Button Signal Input (Active high)

J9: ATX Power Control Connector

PIN No.	Signal Description
1	ATX Power Good Signal (PW-OK)
2	ATX 5V Stand-by (5VSB)
3	ATX Power On Control (PS-ON)
4	Ground

J10: LVDS Panel Control Connector

PIN No.	Signal Description
1	+12V
2	Ground
3	Panel VDD
4	Backlight-on Signal Output

J11/J12: SATA Connector

PIN No.	Signal Description	PIN No.	Signal Description
1	Ground	6	SATA_RXP
2	SATA_TXP	7	Ground
3	SATA_TXN	8	Ground
4	Ground	9	Ground
5	SATA_RXN		

J13: LVDS Panel Connector

PIN No.	Signal Description	PIN No.	Signal Description
1	Lower DATA0- (TXL0N)	2	Lower DATA0+(TXL0P)
3	Lower DATA1- (TXL1N)	4	Lower DATA1+(TXL1P)
5	Lower DATA2- (TXL2N)	6	Lower DATA2+(TXL2P)
7	Lower DATA3- (TXL3N)	8	Lower DATA3+(TXL3P)
9	Lower CLOCK- (TXLCN)	10	Lower CLOCK+(TXLCP)
11	Upper DATA0- (TXU0N)	12	Upper DATA0+(TXU0P)
13	Upper DATA1- (TXU1N)	14	Upper DATA1+(TXU1P)
15	Upper DATA2- (TXU2N)	16	Upper DATA2+(TXU2P)
17	Upper DATA3- (TXU3N)	18	Upper DATA3+(TXU3P)
19	Upper CLOCK- (TXUCN)	20	Upper CLOCK+(TXUCP)

Notes:
1. The signals of LVDS upper channel will be only used in dual-channel LVDS mode.
2. This panel connector (J13) should be accompanied with LVDS Panel Control Connector (J10) and its jumper setting (JP3).
3. In general, lower channel equals odd channel and upper channel equals even channel for different panel description.

J14/J15: USB1~USB4 Connector

PIN No.	Signal Description	PIN No.	Signal Description
1	VCC	2	Ground
3	USB0-	4	Ground
5	USB0+	6	USB1+
7	Ground	8	USB1-
9	Ground	10	VCC

J16/J17 Primary/Secondary IDE Connector (IDE1/IDE2)

PIN No.	Signal Description	PIN No.	Signal Description
1	RESET#	2	Ground
3	Data 7	4	Data 8
5	Data 6	6	Data 9
7	Data 5	8	Data 10
9	Data 4	10	Data 11
11	Data 3	12	Data 12
13	Data 2	14	Data 13
15	Data 1	16	Data 14
17	Data 0	18	Data 15
19	Ground	20	N/C
21	DMA REQ	22	Ground
23	IOW#	24	Ground
25	IOR#	26	Ground
27	IOCHRDY	28	Pull-down
29	DMA ACK#	30	Ground
31	INT REQ	32	N/C
33	SA1	34	CBLID#
35	SA0	36	SA2
37	HDC CS0#	38	HDC CS1#
39	HDD Active#	40	Ground

J18: General Purpose I/O Connector

PIN No.	Signal Description
1	General Purpose I/O Port 0 (GPIO0)
2	General Purpose I/O Port 1 (GPIO1)
3	General Purpose I/O Port 2 (GPIO2)
4	General Purpose I/O Port 3 (GPIO3)
5	Ground
6	General Purpose I/O Port 4 (GPIO4)
7	General Purpose I/O Port 5 (GPIO5)
8	General Purpose I/O Port 6 (GPIO6)
9	General Purpose I/O Port 7 (GPIO7)
10	+5V

Note:
All General Purpose I/O ports can only apply to standard TTL ± 5% signal level (0V/5V), and each Fan.

J19: IrDA Connector

PIN No.	Signal Description
1	+5V
2	CIRRX
3	IRRX
4	Ground
5	IRTX
6	N/C

J20: TMDS Panel Connect

PIN No.	Signal Description	PIN No.	Signal Description
1	TMDS DATA0- (TX0N)	2	TMDS DATA0+ (TX0P)
3	Ground	4	Ground
5	TMDS DATA1- (TX1N)	6	TMDS DATA1+ (TX1P)
7	Ground	8	Ground
9	TMDS DATA2- (TX2N)	10	TMDS DATA2+ (TX2P)
11	Ground	12	Ground
13	TMDS CLOCK- (TXCN)	14	TMDS CLOCK+ (TXCP)
15	+5V	16	+5V
17	DVI DDC Clock (5V I/F)	18	DVI DDC Data (5V I/F)
19	Hot Plug Detect (HPD)	20	N/C

J21: External Thermal Sensor Connector

PIN No	Signal Description
1	Thermistor Pin 1
2	Thermistor Pin 2

Note:
An external thermistor can be connected these two pins for temperature monitoring remotely, such as chassis ambient temperature, etc. Normally, the resistance selected for thermistor should be 10KΩ at 25°C.

J22: External Wake On Ring Connector

PIN No.	Signal Description
1	Ground
2	Ring Signal Input (Active low)

J23: External Wake On LAN Connector

PIN No.	Signal Description
1	5VSB
2	Ground
3	External WOL Signal Input (Active low)

J24: Audio CD-in Connector

PIN No.	Signal Description
1	CD-in Left Channel
2	CD Ground
3	CD Ground
4	CD-in Right Channel

J25: Audio MIC/Line-in/Line-out Connector

PIN No.	Signal Description	PIN No.	Signal Description
1	MIC with Reference Voltage	2	Analog Ground
3	Line-in Left Channel	4	Analog Ground
5	Line-in Right Channel	6	Analog Ground
7	Line-out Left Channel	8	Analog Ground
9	Line-out Right Channel	10	N/C

Note:
The Reference Voltage on MIC signal offers 2.25V~2.75V with 5mA drive.

J26/J27:External LAN Access LED Connector (ZR1 not support)

PIN No.	Signal Description
1	+5V (270 ohm pull-up for HDD LED+)
2	HDD Active # (HDD LED-)

J28: Case-open Detection Connector

PIN No.	Signal Description
1	Case-open Signal (Active low)
2	Ground

J29: SMBus Connector

PIN No.	Signal Description
1	SMBus Clock
2	N/C
3	Ground
4	SMBus Data
5	+3.3V

J30 : COM1 Serial Port 1 Connector

PIN No.	Signal Description
	RS-232
1	DCD (Data Carrier Detect)
2	RXD (Receive Data)
3	TXD (Transmit Data)
4	DTR (Data Terminal Ready)
5	GND (Ground)
6	DSR (Data Set Ready)
7	RTS (Request to Send)
8	CTS (Clear to Send)
9	RI (Ring Indicator)
10	N/C

J31: Parallel Port Connector

PIN No.	Signal Description	PIN No.	Signal Description
1	Strobe#	14	Auto Form Feed#
2	Data 0	15	Error#
3	Data 1	16	Initialization#
4	Data 2	17	Printer Select IN#
5	Data 3	18	Ground
6	Data 4	19	Ground
7	Data 5	20	Ground
8	Data 6	21	Ground
9	Data 7	22	Ground
10	Acknowledge#	23	Ground
11	Busy	24	Ground
12	Paper Empty	25	Ground
13	Printer Select	26	N/C

J32: FDC Interface Connector

PIN No.	Signal Description	PIN No.	Signal Description
1	Ground	2	Density Select 0
3	Ground	4	N/C
5	Ground	6	Density Select 1
7	Ground	8	Index#
9	Ground	10	Motor ENA#
11	Ground	12	Drive Select B#
13	Ground	14	Drive Select A#
15	Ground	16	Motor ENB#
17	Ground	18	Direction#
19	Ground	20	Step#
21	Ground	22	Write Data#
23	Ground	24	Write Gate#
25	Ground	26	Track 0#
27	Ground	28	Write Protect#
29	Ground	30	Read Data#
31	Ground	32	Head Select#
33	Ground	34	Disk Change#

J33: COM2 Serial Port 2 Connector

PIN No.	Signal Description		
	RS-232	RS-422	RS-485
1	DCD (Data Carrier Detect)	TX-	DATA-
2	RXD (Receive Data)	TX+	DATA+
3	TXD (Transmit Data)	RX+	N/C
4	DTR (Data Terminal Ready)	RX-	N/C
5	GND (Ground)	GND	GND
6	DSR (Data Set Ready)	N/C	N/C
7	RTS (Request to Send)	N/C	N/C
8	CTS (Clear to Send)	N/C	N/C
9	RI (Ring Indicator)	N/C	N/C
10	N/C	N/C	N/C

Note:
J33 (COM2) could be configurable as RS-232/422/485 with jumper JP2.

J34: TV-out Connector

PIN No.	Signal Description	PIN No.	Signal Description
1	Ground	2	COMP/B
3	Y/G	4	C/R
5	SYNC	6	N/C

J35/J36 : Ethernet RJ-45 Connector

PIN No.	Signal Description
1	MDI0+ (MDI0P)
2	MDI0- (MDI0N)
3	MDI1+ (MDI1P)
4	MDI2+ (MDI2P)
5	MDI2- (MDI2N)
6	MDI1- (MDI1N)
7	MDI3+ (MDI3P)
8	MDI3- (MDI3N)

J37: PS/2 Keyboard/Mouse Connector

PIN No.	Signal Description
1	Keyboard Data
2	Mouse Data
3	Ground
4	5V Dual
5	Keyboard Clock
6	Mouse Clock

J38: External Keyboard Connector

PIN No.	Signal Description
1	Keyboard Clock
2	Keyboard Data
3	N/C
4	Ground
5	5V

J39: On-board VGA CRT Connector

PIN No.	Signal Description
1	Red
2	Green
3	Blue
4	Monitor ID0 (MONID0) (5V I/F)
5	Ground
6	Ground
7	Ground
8	Ground
9	+5V
10	Ground
11	Monitor ID1 (MONID1) (5V I/F)
12	VGA DDC Data (5V I/F)
13	Horizontal Sync. (HSYNC) (5V I/F)
14	Vertical Sync. (VSYNC) (5V I/F)
15	VGA DDC Clock (5V I/F)

J40: Compact Flash Card

PIN No.	Signal Description	PIN No.	Signal Description
1	Ground	26	N/C
2	Data 3	27	Data 11
3	Data 4	28	Data 12
4	Data 5	29	Data 13
5	Data 6	30	Data 14
6	Data 7	31	Data 15
7	HDC CS0#	32	HDC CS1#
8	Ground	33	Ground
9	Ground	34	IOR#
10	Ground	35	IOW#
11	Ground	36	Pull-Up
12	Ground	37	INT REQ
13	VCC	38	VCC
14	Ground	39	Pull-down
15	Ground	40	N/C
16	Ground	41	RESET#
17	Ground	42	IOCHRDY
18	SA2	43	SDREQ
19	SA1	44	SDDACK
20	SA0	45	HDD Active#
21	Data 0	46	Pull-down
22	Data 1	47	Data 8
23	Data 2	48	Data 9
24	N/C	49	Data 10
25	N/C	50	Ground

FAN1/FAN2/FAN3 : CPU/Power/System Fan Connector

PIN No.	Signal Description
1	Ground
2	+12V
3	Fan Speed Detecting signal

Note:
The fan must be a 12V fan. And there is not any over current protection.

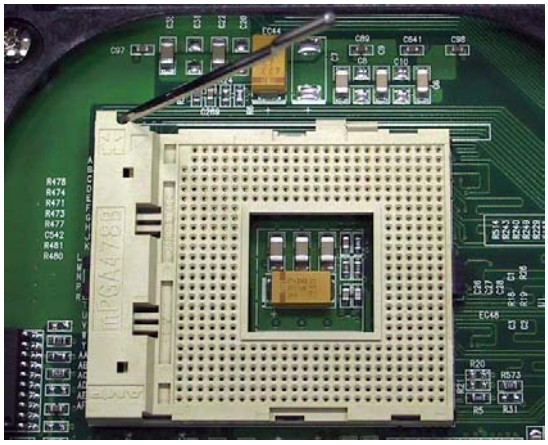
Chapter 3
System Installation

This chapter provides you with instructions to set up your system. The additional information is enclosed to help you set up onboard PCI device and handle WDT operation in software programming.

3.1 Socket 478 Pentium 4/Celeron Processor

Installing Socket 478 CPU

1) Lift the handling lever of CPU socket outwards and upwards to the other end.



2) Align the processor pins with pinholes on the socket. Make sure that the notched corner or dot mark (pin 1) of the CPU corresponds to the socket's bevel end. Then press the CPU gently until it fits into place. If this operation is not easy or smooth, don't do it forcibly. You need to check and rebuild the CPU pin uniformly.

3) Push down the lever to lock processor chip into the socket once CPU fits.

4) Follow the installation guide of cooling fan or heat sink to mount it on CPU surface and lock it on the socket 478.

Removing CPU

1) Unlock the cooling fan first.
2) Lift the lever of CPU socket outwards and upwards to the other end.
3) Carefully lifts up the existing CPU to remove it from the socket.
4) Follow the steps of installing a CPU to change to another one or place handling bar to close the opened socket.

Configuring System Bus

ROBO-8714VG2A will automatically detect the CPU used. CPU speed of Intel P4 can be detected automatically.

3.2 Main Memory

ROBO-8714VG2A provides ECC function for data sensitive application. Two 184-pin DIMM sockets support DDR-SDRAM as main memory. The maximum memory size can be Up to 2GB DDR 400/333/266 SDRAM. Auto detecting memory clock according to BIOS CMOS settings.

For system compatibility and stability, don't use memory module without brand. You can also use only one double-sided DIMM in either one DIMM socket or two single-sided DIMM in both sockets.

Watch out the contact and lock integrity of memory module with socket, it will impact on the system reliability. Follow normal procedures to install your DRAM module into memory socket. Before locking, make sure that all modules have been fully inserted into the card slots.

Dual Channel DDR DIMMs

Dual Channel DDR memory technology doubles the bandwidth of memory bus. Adequate or higher bandwidth of memory than processor would increase system performance. To enable Dual Channel DDR memory technology, you have to install dual identical memory modules in both memory sockets. Following tables show bandwidth information of different processor and memory configurations.

CPU FSB	Bandwidth
800MHz	6.4GB/s
533MHz	4.2GB/s
400MHz	3.2GB/s

Memory Frequency	Dual Channel DDR Bandwidth	Single Channel DDR Bandwidth
400MHz	6.4GB/s	3.2GB/s
333MHz	5.4GB/s	2.7GB/s
266MHz	4.2GB/s	2.1GB/s

Note:
To maintain system stability, don't change any of DRAM parameters in BIOS setup to upgrade your system performance without acquiring technical information.

Memory frequency / CPU FSB synchronization

ROBO-8714VG2A support different memory frequencies depending on the CPU front side bus and the type of DDR DIMM.

CPU FSB	Memory Frequency
800MHz	400/333*MHz
533MHz	333*/266MHz
400MHz	266MHz

Note:
When using 800MHz FSB CPU, DDR DIMMs may run at 320MHz (not 333MHz) due to chipset limitation.

3.3 CompactFlash Card

ROBO-8714VG2A reserves one Type II CompactFlash socket for installing CompactFlash card up to 1GB.

Installing CF

1) To protect your card, always hold it by the edges. Holding the center of the card probably won't damage it, but holding the card by the edges provides an extra measure of protection.
2) Slide CompactFlash card into the socket.
3) If CompactFlash card doesn't slide into the socket easily, don't try to force it. It won't fit if you install it backwards. Turn it around and try inserting it again.

WARNING

1) Keep CompactFlash card away from direct sunlight, moisture, and magnetic fields.
2) The True IDE mode does not support hot insertion and removal because of the probable disruption of signals on the system bus.

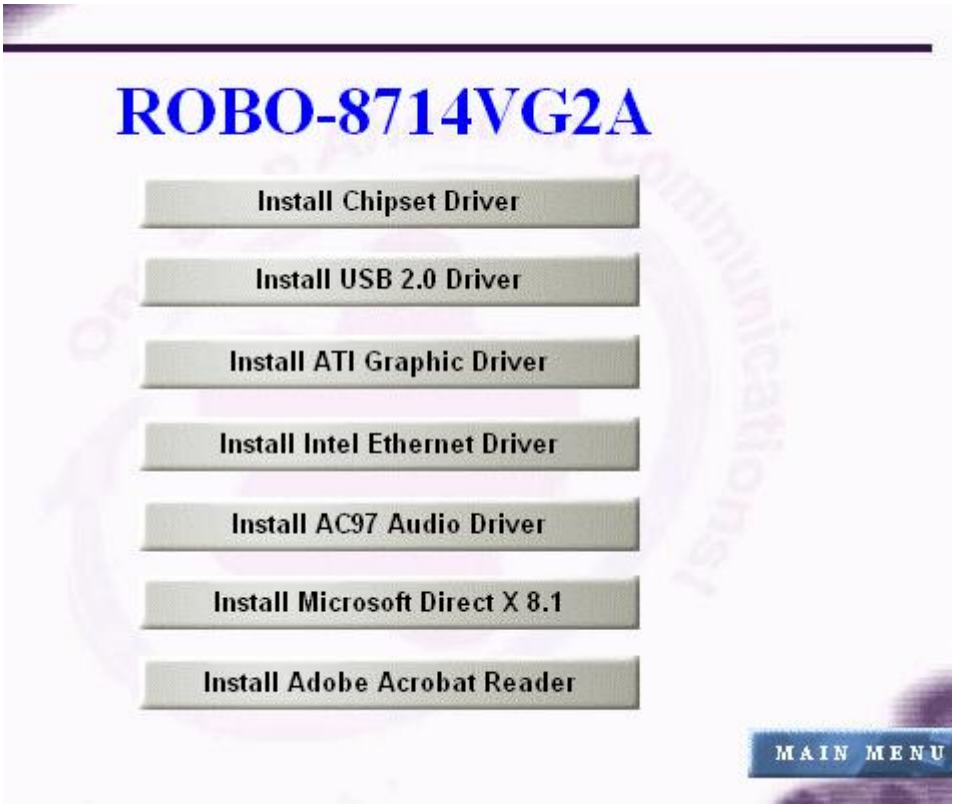
3.4 Installing the Single Board Computer

To install your ROBO-8714VG2A into standard chassis or proprietary environment, you need to perform the following:

Step 1 : Check all jumpers setting on proper position
Step 2 : Install and configure CPU and memory module on right position
Step 3 : Place ROBO-8714VG2A into the dedicated position in your system
Step 4 : Attach cables to existing peripheral devices and secure it

WARNING
Please ensure that your SBC is properly inserted and fixed by mechanism. Otherwise, the system might be unstable or do not work due to bad contact of PICMG 1.0 External Bus supports up to 64-bit/66MHz PCI-X plus ISA-bus slot.

Note:
Please refer to section 3.4.1 to 3.4.5 to install INF/VGA/LAN/Audio/USB 2.0 drivers.



3.4.1 Chipset Component Driver

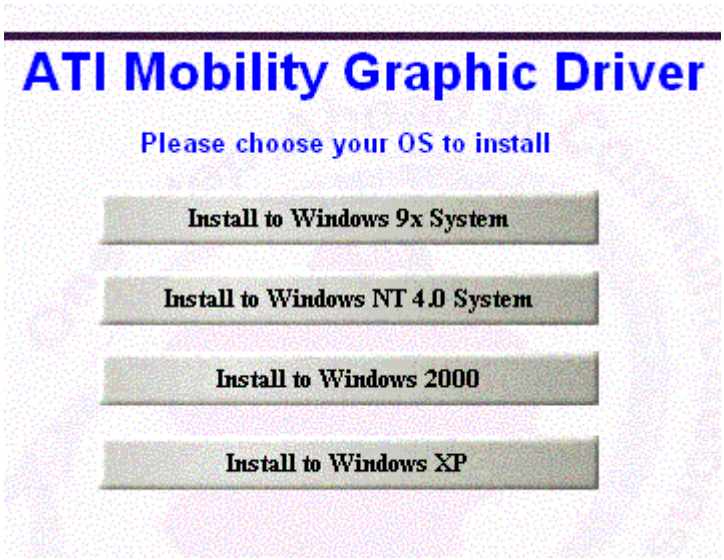
The chipset on ROBO-8714VG2A is new one that a few old operating systems might not be able to recognize. To overcome this compatibility issue, for Windows Operating Systems such as Windows 2000/XP/Server 2003, please install its INF before any of other Drivers are installed.

3.4.2 ATI Mobility Radeon Graphic Integrated Chipset

Using ATI Mobility Radeon High performance graphic integrated chipset is aimed to gain an outstanding graphic performance. With no additional video adaptor, this onboard video will usually be the system display output.

Drivers Support

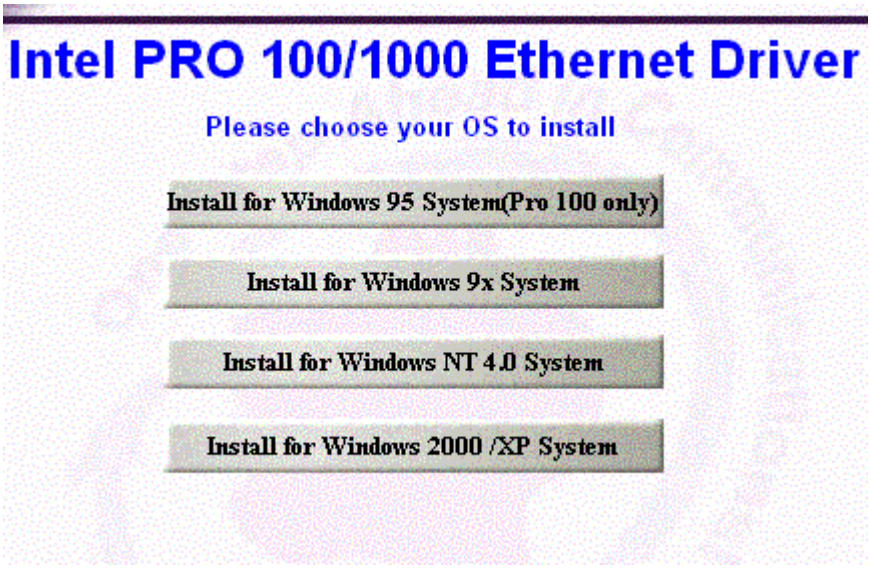
Please find ATI Mobility Graphic driver in the ROBO-8714VG2A CD-title. Drivers support Windows NT 2000, and XP.


ATI Mobility Graphic Driver
Please choose your OS to install
Install to Windows 9x System
Install to Windows NT 4.0 System
Install to Windows 2000
Install to Windows XP

3.4.3 Gigabit Ethernet Controller

Drivers Support

Please find Intel 82547/82541 LAN driver in /Ethernet directory of ROBO-8714VG2A CD-title. The drivers support Windows 2000/XP, and Linux.


Intel PRO 100/1000 Ethernet Driver
Please choose your OS to install
Install for Windows 95 System(Pro 100 only)
Install for Windows 9x System
Install for Windows NT 4.0 System
Install for Windows 2000 /XP System

LED Indicator (for LAN status)

ROBO-8714VG2A provides two LED indicators to report Intel 82547 Gigabit Ethernet interface status. Please refer to the table below as a quick reference guide.

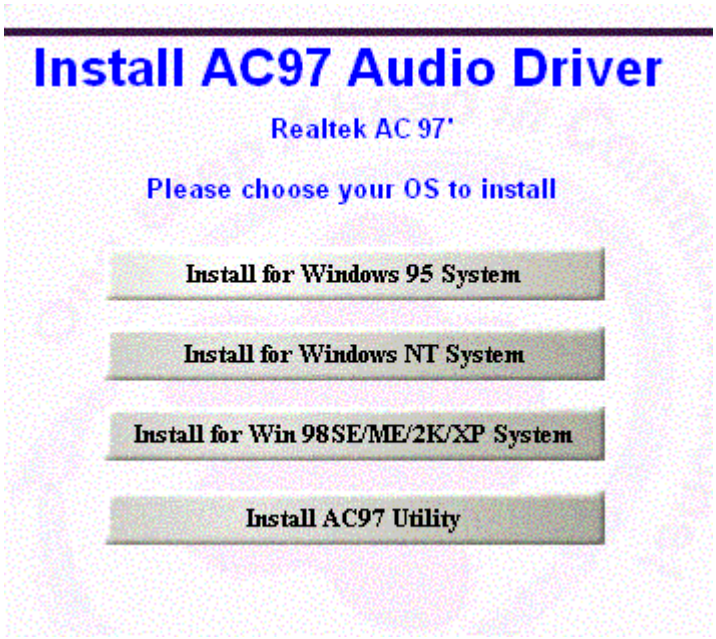
82547/82541	Color	Name of LED	Operation of Ethernet Port		
			ON	OFF	
Status LED	Green	LAN Linked & Active LED	Linked	Active (Blinking)	
Speed LED	Orange	LAN speed LED	Giga Mbps	100 Mbps	10 Mbps
	Green		Orange	Green	Off

3.4.4 On-board AC-97 Audio Device

The on-board AC-97 audio device provides a more than standard sound display. It is capable for many general purposes. Intel HR 6300ESB embedded AC'97 Codec Controller supports this onboard Audio function.

Driver Support

Please find Sound driver in \Audio\Ac97\Realtek of ROBO-8714VG2A driver CD-title. The drivers support Windows 2000/XP and AC97 Utility.


Install AC97 Audio Driver
Realtek AC 97'
Please choose your OS to install
Install for Windows 95 System
Install for Windows NT System
Install for Win 98SE/ME/2K/XP System
Install AC97 Utility

To disable this onboard Audio function, please configure the "Onboard Device" of "Integrated Peripheral" Setup Menu in BIOS. Change the "AC'97 Audio" setting to "Disable" will help you to turn off this PCI Audio device.

3.4.5 On-Board USB 2.0 Controller

Drivers Support

Please find Intel HR USB driver in /USB20 directory of ROBO-8714VG2A CD-title. The drivers support Windows 2000 and XP.

USB 2.0 Driver
This driver only works with Intel ICH4 and ICH5R chipset.
Install for Windows 9x system
Windows 2000 USB 2.0 Guide
Windows XP USB 2.0 Guide
You can find other driver and install guide form "\chipset\intel\usb20\" .
Pass below button into the dictionary.
Press here !!
High Speed USB (USB 2.0) driver to provide high speed USB functionality on Portwell SBC.
Download File(s):
http://windowsupdate.microsoft.com

3.5 Clear CMOS Operation

The following table indicates how to enable/disable CMOS Clear Function hardware circuit by putting jumpers at proper position.

JP4	Function
1-2 Short	Normal Operation ★
2-3 Short	Clear CMOS contents

To correctly operate CMOS Clear function, users must turn off the system, move JP4 jumper to short pin 2 and 3. To clear CMOS contents, please turn the power back on and turn it off again for AT system, or press the toggle switch a few times for ATX system. Move the JP4 back to 1-2 position (Normal Operation) and start the system. Users may then follow the displayed message to load BIOS default setting.

3.6 WDT Function

The working algorithm of the WDT function can be simply described as a counting process. The Time-Out Interval can be set through software programming. The availability of the time-out interval settings by software or hardware varies from boards to boards.

ROBO-8714VG2A allows users control WDT through dynamic software programming. The WDT starts counting when it is activated. It sends out a signal to system reset or to non-maskable interrupt (NMI), when time-out interval ends. To prevent the time-out interval from running out, a re-trigger signal will need to be sent before the counting reaches its end. This action will restart the counting process. A well-written WDT program should keep the counting process running under normal condition. WDT should never generate a system reset or NMI signal unless the system runs into troubles.

The related Control Registers of WDT are all included in the following sample program that is written in C language. User can fill a non-zero value into the Time-out Value Register to enable/refresh WDT. System will be reset after the Time-out Value to be counted down to zero. Or user can directly fill a zero value into Time-out Value Register to disable WDT immediately. To ensure a successful accessing to the content of desired Control Register, the sequence of following program codes should be step-by-step run again when each register is accessed.

Additionally, there are maximum 2 seconds of counting tolerance that should be considered into user' application program. For more information about WDT, please refer to Winbond W83627HF data sheet.

There are two PNP I/O port addresses that can be used to configure WDT,
1) 0x2E:EFIR (Extended Function Index Register, for identifying CR index number)
2) 0x2F:EFDR (Extended Function Data Register, for accessing desired CR)

Below are some example codes, which demonstrate the use of WDT.

```
// Enter Extended Function Mode
outp(0x002E, 0x87);
outp(0x002E, 0x87);
// Assign Pin 89 to be a WDTO
outp(0x002E, 0x2B);
outp(0x002F, inp(0x002F) & 0xEF);
// Select Logic Device 8
outp(0x002E, 0x07);
outp(0x002F, 0x08);
```

```
// Active Logic Device 8
outp(0x002E, 0x30);
outp(0x002F, 0x01);
// Select Count Mode
outp(0x002E, 0xF5);
outp(0x002F, (inp(0x002F) & 0xF7) | ( Count-mode Register  & 0x08));
// Specify Time-out Value
outp(0x002E, 0xF6);
outp(0x002F,  Time-out Value Register );
// Disable WDT reset by keyboard/mouse interrupts
outp(0x002E, 0xF7);
outp(0x002F, 0x00);
// Exit Extended Function Mode
outp(0x002E, 0xAA);
```

Definitions of Variables:

Value of Count-mode Register:
1) 0x00 -- Count down in seconds (Bit3=0)
2) 0x08 -- Count down in minutes (Bit3=1)
Value of Time-out Value Register:
1) 0x00 -- Time-out Disable
2) 0x01~0xFF -- Value for counting down

3.7 SMBus

J29: SMBus Connector

PIN No.	Signal Description
1	SMBus Clock
2	N/C
3	Ground
4	SMBus Data
5	+3V

The System Management Bus is a two-wire interface through which simple power-related chips can communicate with rest of the system. It uses I2C as its backbone.

A system using SMBus passes messages to and from devices instead of tripping individual control lines. With the SMBus, a device can provide manufacturer information, tell the system what its model/part number is, save its state for a suspend event, report different types of errors, accept control parameters, and return its status.

The SMBus may share the same host device and physical bus as ACCESS bus components provided that an appropriate electrical bridge is provided between the interal SMB devices and external ACCESS bus devices.

3.8 Display Output

LCD Display Interface / Pin assignment

Two LCD display TMDS & LVDS interfaces support.

J10: LVDS Panel Control Connector

PIN No.	Signal Description
1	+12V
2	Ground
3	Panel VDD
4	Backlight-on Signal Output

J13: LVDS Panel Connector

PIN No.	Signal Description	PIN No.	Signal Description
1	Lower DATA0- (TXL0N)	2	Lower DATA0+(TXL0P)
3	Lower DATA1- (TXL1N)	4	Lower DATA1+(TXL1P)
5	Lower DATA2- (TXL2N)	6	Lower DATA2+(TXL2P)
7	Lower DATA3- (TXL3N)	8	Lower DATA3+(TXL3P)
9	Lower CLOCK- (TXLCN)	10	Lower CLOCK+(TXLCP)
11	Upper DATA0- (TXU0N)	12	Upper DATA0+(TXU0P)
13	Upper DATA1- (TXU1N)	14	Upper DATA1+(TXU1P)
15	Upper DATA2- (TXU2N)	16	Upper DATA2+(TXU2P)
17	Upper DATA3- (TXU3N)	18	Upper DATA3+(TXU3P)
19	Upper CLOCK- (TXUCN)	20	Upper CLOCK+(TXUCP)

Notes:
1. The signals of LVDS upper channel will be only used in dual-channel LVDS mode.
2. This panel connector (J13) should be accompanied with LVDS Panel Control Connector (J10) and its jumper setting (JP3).
3. In general, lower channel equals odd channel and upper channel equals even channel for different panel description.

TV Output Interface/ Pin assignment

Composite Video, S-Video and SCART R/G/B interfaces are 3 kinds of TV outputs provided by this system. Please refer to connector J34 for more details. Each time when the system is on, the system auto-detects one interfaces for outputting display information.

J34: TV-out Connector

PIN No.	Signal Description	PIN No.	Signal Description
1	Ground	2	COMP/B
3	Y/G	4	C/R
5	SYNC	6	N/C

A connection to one of these three different interfaces will result different signal line impedance combinations. The selection will be made base on the different impedances combinations.

3.9 GPIO

The ROBO-8714VG2A series provides 8 programmable input or output ports that can be individually configured to perform a simple basic I/O function. Users can configure each individual port to become an input or output port by programming register bit of I/O Selection. To invert port value, the setting of Inversion Register has to be made. Port values can be set to read or write through Data Register.

3.9.1 Pin assignment

J18: General Purpose I/O Connector

PIN No.	Signal Description
1	General Purpose I/O Port 0 (GPIO0)
2	General Purpose I/O Port 1 (GPIO1)
3	General Purpose I/O Port 2 (GPIO2)
4	General Purpose I/O Port 3 (GPIO3)
5	Ground
6	General Purpose I/O Port 4 (GPIO4)
7	General Purpose I/O Port 5 (GPIO5)
8	General Purpose I/O Port 6 (GPIO6)
9	General Purpose I/O Port 7 (GPIO7)
10	+5V

Note:
All General Purpose I/O ports can only apply to standard TTL ± 5% signal level (0V/5V), and each Fan.

3.9.2 ROBO-8714VG2A GPIO Programming Guide

There are 8 GPIO pins on ROBO-8714VG2A. These GPIO pins are from SUPER I/O (W83627HF) GPIO pins, and can be programmed as Input or Output direction.

J18 pin header is for 8 GPIO pins and its pin assignment as following:

J18_Pin1=GPIO0:from SUPER I/O_GPIO10
J18_Pin2=GPIO1:from SUPER I/O_GPIO11
J18_Pin3=GPIO2:from SUPER I/O_GPIO12
J18_Pin4=GPIO3:from SUPER I/O_GPIO13
J18_Pin6=GPIO4:from SUPER I/O_GPIO14
J18_Pin7=GPIO5:from SUPER I/O_GPIO15
J18_Pin8=GPIO6:from SUPER I/O_GPIO16
J18_Pin9=GPIO7:from SUPER I/O_GPIO17

<<<<< Be careful Pin5=GND , Pin10=VCC >>>>>

There are several Configuration Registers (CR) of W83627HF needed to be programmed to control the GPIO direction, and status (GPI)/value (GPO). CR00h ~ CR2F are common (global) registers to all Logical Devices (LD) in W83627HF. CR07h contains the Logical Device Number that can be changed to access the LD as needed. LD7 contains the GPIO10~17 registers.

Programming Guide:

Step1: CR2A_Bit [7.2]. P [1,1,1,1,1,1]; to select multiplexed pins as GPIO10~17 pins
Step2: LD7_CR07h.P [07h]; Point to LD7
Step3: LD7_CR30h_Bit0.P1; Enable LD7
Step4: Select GPIO direction, Get Status or output value.

LD7_CRF0h; GPIO17 ~ 10 direction, 1 = input, 0 = output pin
LD7_CRF2h.P [00h]; Let CRF1 (GPIO data port) non-invert to prevent from confusion
LD7_CRF1h; GPIO17~10 data port, for input pin, get status from the related bit, for output pin, write value to the related bit.

For example,

LD7_CRF0h_Bit4.P0; Let GPIO14 as output pin
LD7_CRF2h_Bit4.P0; Let CRF1_Bit4 non-inverted
LD7_CRF1h_Bit4.P0; Output "0" to GPIO14 pin (J18_Pin6)

LD7_CRF0h_Bit0.P1; Let GPIO10 as input pin
LD7_CRF2h_Bit0.P0; Let CRF1_Bit0 non-inverted
Read LD7_CRF1h_Bit0; Read the status from GPIO10 pin (J18_Pin1)

How to access W83627HF CR?

In ROBO-8714, the EFER = 002Eh, and EFDR = 002Fh.
EFER and EFDR are 2 IO ports needed to access W83627HF CR.
EFER is the Index Port, EFDR is the Data Port.
CR index number needs to be written into EFER first,
Then the data will be read/written from/to EFDR.

To R/W W83627HF CR, it is needed to Enter/Enable Configuration Mode first.
When completing the programming, it is suggested to Exit/Disable Configuration Mode.

Enter Configuration Mode: Write 87h to IO port EFER twice.
Exit Configuration Mode: Write AAh to IO port EFER.

3.9.3 Example

Define GPIO4 as output pin, and output "0" to this pin.

```
mov     dx,2eh      ; Enter Configuration Mode
mov     al,87h
out     dx,al
jmp     $+2
out     dx,al

mov     dx,2eh
mov     al,2Ah      ; Read CR2A
out     dx,al
mov     dx,2fh
in      al,dx
or      al,0FCh     ; CR2A_Bit[7..2].P[1,1,1,1,1,1]
mov     ah,al

mov     dx,2eh
mov     al,2Ah
out     dx,al
mov     dx,2fh
mov     al,ah
out     dx,al

mov     dx,2eh
mov     al,07h      ; Point to LDN7
out     dx,al
mov     dx,2fh
mov     al,07h
out     dx,al

mov     dx,2eh      ; Read CR30
mov     al,30h
out     dx,al
mov     dx,2fh
in      al,dx
or      al,01h
mov     ah,al
```

```
mov     dx,2eh      ; CR30_Bit0.P1
mov     al,30h
out     dx,al
mov     dx,2fh
mov     al,ah
out     dx,al

mov     dx,2eh
mov     al,0f0h     ; Read    LD7_CRF0
out     dx,al
mov     dx,2fh
in      al,dx
and     al,0efh
mov     ah,al

mov     dx,2eh
mov     al,0f0h     ; LD7_CRF0_Bit4.P0
out     dx,al
mov     dx,2fh
mov     al,ah
out     dx,al

mov     dx,2eh
mov     al,0f2h     ; Read    LD7_CRF2
out     dx,al
mov     dx,2fh
in      al,dx
and     al,0efh
mov     ah,al

mov     dx,2eh
mov     al,0f2h     ; LD7_CRF2_Bit4.P0
out     dx,al
mov     dx,2fh
mov     al,ah
out     dx,al

mov     dx,2eh
mov     al,0f1h     ; Read    LD7_CRF1
out     dx,al
mov     dx,2fh
in      al,dx
and     al,0efh
mov     ah,al
```

```
mov     dx,2eh
mov     al,0f1h     ; LD7_CRF1_Bit4.P0
out     dx,al
mov     dx,2fh
mov     al,ah
out     dx,al

mov     dx,2eh      ; Exit Configuration Mode
mov     al,0AAh
out     dx,al
```

Chapter 4
BIOS Setup Information

ROBO-8714VG2A is equipped with the AWARD BIOS stored in Flash ROM. These BIOS has a built-in Setup program that allows users to modify the basic system configuration easily. This type of information is stored in CMOS RAM so that it is retained during power-off periods. When system is turned on, ROBO-8714VG2A communicates with peripheral devices and checks its hardware resources against the configuration information stored in the CMOS memory. If any error is detected, or the CMOS parameters need to be initially defined, the diagnostic program will prompt the user to enter the SETUP program. Some errors are significant enough to abort the start-up.

4.1 Entering Setup

Turn on or reboot the computer. When the message "Hit <DEL> if you want to run SETUP" appears, press <Del> key immediately to enter BIOS setup program.

If the message disappears before you respond, but you still wish to enter Setup, please restart the system to try "COLD START" again by turning it OFF and then ON, or touch the "RESET" button. You may also restart from "WARM START" by pressing <Ctrl>, <Alt>, and <Delete> keys simultaneously. If you do not press the keys at the right time and the system will not boot, an error message will be displayed and you will again be asked to,

Press <F1> to Run SETUP or Resume

In HIFLEX BIOS setup, you can use the keyboard to choose among options or modify the system parameters to match the options with your system. The table below will show you all of keystroke functions in BIOS setup.

General Help	
↑ ↓ → ←	: Move
Enter	: Select
+ / - /PU /PD	: Value
ESC	: Exit
F1	: General Help
F2	: Item Help
F5	: Previous Values
F6	: Fail-Safe Defaults
F7	: Optimized Defaults
F9	: Menu in BIOS
F10	: Save

4.2 Main Menu

Once you enter ROBO-8714VG2A AWARD BIOS CMOS Setup Utility, you should start with the Main Menu. The Main Menu allows you to select from eleven setup functions and two exit choices. Use arrow keys to switch among items and press <Enter> key to accept or bring up the sub-menu.

Phoenix- AwardBIOS CMOS Setup Utility

▶ Standard CMOS Features ▶ Advanced BIOS Features ▶ Advanced Chipset Features ▶ Integrated Peripherals ▶ Power Management Setup ▶ PnP/PCI Configurations ▶ PC Health Status	▶ Frequency/Voltage Control Load Fail-Safe Defaults Load Optimized Defaults Set Supervisor Password Set User Password Save & Exit Setup Exit Without Saving
ESC : Quit F9 : Menu in BIOS ↑↓→← : Select Item F10 : Save & Exit Setup	
Time, Date, Hard Disk Type …	

Note:
It is strongly recommended to reload Optimal Setting if CMOS is lost or BIOS is updated.

4.3 Standard CMOS Setup Menu

This setup page includes all the items in standard compatible BIOS. Use the arrow keys to highlight the item and then use the <PgUp>/<PgDn> or <+>/<-> keys to select the value or number you want in each item and press <Enter> key to certify it.

Follow command keys in CMOS Setup table to change **Date**, **Time**, **Drive type**, and **Boot Sector Virus Protection Status**.

Phoenix- AwardBIOS CMOS Setup Utility
Standard CMOS Features

Date (mm:dd:yy)	Fri, Jul 1 2005	Item Help
Time (hh:mm:ss)	11 : 29 : 50	
▶ IDE Channel 0 Master	[Maxtor 91021U2]	Menu Level ▶
▶ IDE Channel 0 Slave	[None]	
▶ IDE Channel 1 Master	[CD-540E]	Change the day, month, year and century
▶ IDE Channel 1 Slave	[None]	
▶ IDE Channel 2 Master	[ST380817AS]	
▶ IDE Channel 3 Master	[None]	
Drive A	[1.4M, 3.5 in.]	
Drive B	[None]	
Floppy 3 Mode Support	[Disabled]	
Video	[EVG/VGA]	
Halt On	[All, But Keyboard]	
Base Memory	640K	
Extended Memory	522240K	
Total Memory	523264K	

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

■ **Menu Selections**

Item	Options	Description
Date	mm:dd:yy	Change the day, month, year and century
Time	hh:mm:ss	Change the internal clock
IDE Channel 0 Master	Options are in its sub menu	Press <Enter> to enter the sub menu of detailed options
IDE Channel 0 Slave	Options are in its sub menu	Press <Enter> to enter the next page for detail hard drive settings

IDE Channel 1 Master	Options are in its sub menu	Press <Enter> to enter the next page for detail hard drive settings
IDE Channel 1 Slave	Options are in its sub menu	Press <Enter> to enter the next page for detail hard drive settings
IDE Channel 2 / 3 Master	Options are in its sub menu	Press <Enter> to enter the next page for detail hard drive settings
Drive A Drive B	None 360K, 5.25 in 1.2M, 5.25 in 720K, 3.5 in 1.44M, 3.5 in 2.88M, 3.5 in	Press <Enter> to enter the next page for detail hard drive settings
Floppy 3 Mode Support	Disabled Drive A Drive B Both	Floppy 3 is the Japanese standard floppy drive mode. It stores 1.2MB on a 3.5" diskette instead of 1.44MB.
Video	EGA/VGA CGA 40 CGA 80 MONO	Select the default video device
Halt On	All Errors No Errors All, but Keyboard All, but Diskette All, but Disk/Key	Select the situation in which you want the BIOS to stop the POST process and notify you
Base Memory	640K	Displays the amount of conventional memory detected during boot up
Extended Memory	N/A	Displays the amount of extended memory detected during boot up
Total Memory	N/A	Displays the total memory available in the system

4.4 IDE Adaptors Setup Menu

The IDE adapters control the IDE devices, such as hard disk drive or CDROM drive. It uses a separate sub menu to configure each hard disk drive.

Phoenix- AwardBIOS CMOS Setup Utility
IDE Channel 0 Master

IDE HDD Auto-Detection	[Press Enter]	Item Help
IDE Channel 0 Master	[Auto]	Menu Level ▶
Access Mode	[Auto]	
Capacity	10246 MB	To atuo-detect the HDD's size, head … on this channel
Cylinder	19852	
Head	16	
Precomp	0	
Landing Zone	19851	
Sector	63	

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

■ **Menu Selections**

Item	Options	Description
IDE HDD Auto-detection	Press Enter	Press Enter to auto-detect the HDD on this channel. If detection is successful, it fills the remaining fields on this menu.
IDE Channel 0 Master	None Auto Manual	Selecting 'manual' lets you set the remaining fields on this screen. Selects the type of fixed disk. "User Type" will let you select the number of cylinders, heads, etc. Note: PRECOMP=65535 means NONE!
Access Mode	CHS LBA Large Auto	Choose the access mode for this hard disk
The following options are selectable only if the 'IDE Channel 0 Master 'item is set to 'Manual'		

Capacity	Auto Display your disk drive size	Disk drive capacity (Approximated). Note that this size is usually slightly greater than the size of a formatted disk given by a disk-checking program.
Cylinder	Min = 0 Max = 65535	Set the number of cylinders for this hard disk.
Head	Min = 0 Max = 255	Set the number of read/write heads
Precomp	Min = 0 Max = 65535	**** Warning: Setting a value of 65535 means no hard disk
Landing zone	Min = 0 Max = 65535	****
Sector	Min = 0 Max = 255	Number of sectors per track

Phoenix- AwardBIOS CMOS Setup Utility
IDE Channel 2 Master

IDE HDD Auto-Detection	[Press Enter]	Item Help
Extended IDE Drive	[Auto]	Menu Level ▶
Access Mode	[Auto]	
Capacity	80GB	To atuo-detect the HDD's size, head … on this channel
Cylinder	38309	
Head	16	
Precomp	0	
Landing Zone	38308	
Sector	255	

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

■ **Menu Selections**

Item	Options	Description
IDE HDD Auto-detection	Press Enter	Press Enter to auto-detect the HDD on this channel. If detection is successful, it fills the remaining fields on this menu.
Extended IDE Drive	None Auto	
Access Mode	Large Auto	Choose the access mode for this hard disk
The following options are selectable only if the 'IDE Channel 2 Master 'item is set to 'Manual'		
Capacity	Auto Display your disk drive size	Disk drive capacity (Approximated). Note that this size is usually slightly greater than the size of a formatted disk given by a disk-checking program.
Cylinder	Min = 0 Max = 65535	Set the number of cylinders for this hard disk.
Head	Min = 0 Max = 255	Set the number of read/write heads
Precomp	Min = 0 Max = 65535	**** Warning: Setting a value of 65535 means no hard disk
Landing zone	Min = 0 Max = 65535	****
Sector	Min = 0 Max = 255	Number of sectors per track

4.5 Advanced BIOS Feature

This section allows you to configure your system for basic operation. You have the opportunity to select the system's default speed, boot-up sequence, keyboard operation, shadowing and security.

Phoenix- AwardBIOS CMOS Setup Utility
Advanced BIOS Features

▶ CPU Feature	[Press Enter]	Item Help
▶ Hard Disk Boot Priority	[Press Enter]	
Virus Warning	[Disabled]	Menu Level ▶
CPU L1 & L2 Cache	[Enabled]	
Hyper-Threading Technology	[Enabled]	
Quick Power On Self Test	[Enabled]	
First Boot Device	[Hard Disk]	
Second Boot Device	[CD-ROM]	
Third Boot Device	[Floppy]	
Boot Other Device	[Enabled]	
Swap Floppy Drive	[Disabled]	
Boot up Floppy Seek	[Disabled]	
Boot up NumLock Status	[On]	
Gate A20 Option	[Normal]	
Typematic Rate Setting	[Disabled]	
X Typematic Rate (Chars/Sec)	6	
X Typematic Delay (Msec)	250	
Security Option	[Setup]	
X APIC Mode	Enabled	
MPS Version Control For OS	[1.4]	
OS Select For DRAM > 64MB	[Non-OS2]	
Small Logo(EPA) Show	[Disabled]	

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Phoenix- AwardBIOS CMOS Setup Utility
CPU Feature

Delay Prior to Thermal	[16 Min]	Item Help
Thermal Management	Thermal Monitor 1	
Limit CPUID MaxVal	[Disabled]	Menu Level ▶

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Delay Prior to Thermal

The choice: 4 Min, 8 Min, 16 Min, and 32 Min.

Limit CPUID Maxval

Set Limit CPUID MaxVal to 3, Should Be "Disabled" for WinXP.

Enabled	For OS: Windows NT4.0 Install.
Disabled	For OS: Windows XP Install.

Phoenix- AwardBIOS CMOS Setup Utility
Hard Disk Boot Priority

1. Ch0 M. : Maxtor 91021U2		Item Help
2. Ch2 M. : ST380817AS		
3. Bootable Add-in Cards		Menu Level ▶ Use < ↑ > or < ↓ > to select a device, then press <+> to move it up, or <-> to move it down the list. Press <ESC> to exit this menu.

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Hard Disk Boot Priority

Select Hard Disk Boot Device Priority. Use < ↑ > or < ↓ > to select a device, then press <+> to move it up, or <-> to move it down the list. Press <ESC> to exit this menu.

Bootable Add-in Cards	Select SCSI Device Boot
Ch x M (S).	Select IDE Channel 0,1 Master or Salve Boot
Ch x M.	Select IDE Channel 2 or 3 Master Boot

Virus Warning

Allow you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep.

Enabled	Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.
Disabled	No warning message will appear when anything attempts to access the boot sector or hard disk partition table.

CPU L1 Cache/L2 Cache

These two categories speed up memory access. However, it depends on CPU/chipset design.

Enabled	Enable Cache
Disabled	Disable Cache

Hyper-Threading Technology

"Enabled" for Windows XP and Linux 2.4.X (OS optimized for Hyper-Threading Technology and "Disabled" for other OS (OS not optimized for Hyper-Threading Technology).

The choice: Enabled, Disabled.

Quick Power On Self Test

Allows the system to skip certain tests while booting. This will decrease the time needed to boot the system.

Enabled	Enable quick POST
Disabled	Normal POST

First/Second/Third Boot Device

Select your boot device priority.

The choice: Floppy, LS120, Hard Disk, CDROM, ZIP 100, USB-FDD, USB-ZIP, USB-CDROM, and Disabled.

Boot Other Device

Select your boot device priority.

The choice: Enabled, Disabled.

Swap Floppy Drive

If the system has two floppy drives, choose enable to assign physical driver B to logical drive A and Vice-Versa.

The choice: Enabled, Disabled.

Boot Up Floppy Seek

Enabled tests floppy drives to determine whether they have 40 or 80 tracks.

The choice: Enabled, Disabled.

Boot Up NumLock Status

Select power on state for NumLock.

The choice: Off, On.

Gate A20 Option

Fast-lets chipsets control Gate A20 and Normal – a pin in the keyboard controller controls Gate A20. Default is Fast.

The choice: Normal, Fast.

Typematic Rate Setting

Keystrokes repeat at a rate determined by the keyboard controller – When enabled, the typematic rate and typematic delay can be selected.

The choice: Enabled, Disabled.

Typematic Rate (Chars/sec)

The rate at which character repeats when you hold down a key.

The choice: 6, 8, 10, 12, 15, 20, 24, and 30.

Typematic delay (Msec)

The delay before keystrokes begin to repeat.

The choice: 250, 500, 750, and 1000.

Security Option

Select whether the password is required every time the system boots or only when you enter setup.

System	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
Setup	The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

APIC Mode

The choice: Enabled, Disabled.

MPS Version Control For OS

The choice: 1.1, 1.4.

OS Select For DRAM > 64MB

Select OS/2 only if you are running SO/2 operating system with greater than 64MB of RAM on the system.

The choice: Non-OS2, OS2.

Small Logo (EPA) Show

The choice: Enabled, Disabled.

4.6 Advanced Chipset Feature

This section allows you to configure the system based on the specific features of the Intel 875P and 6300ESB Chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM (DDR SDRAM) and the external cache. It also coordinates communications between the conventional the PCI-X bus. It must be stated that these items should never need to be altered. The default settings have been chosen because they provide the best operating conditions for your system. The only time you might consider making any changes would be if you discovered that data was being lost while using your system.

Phoenix- AwardBIOS CMOS Setup Utility
Advanced Chipset Features

DRAM Timing Selectable	[By SPD]	Item Help
X CAS Latency Time	2.5	
X Active to Precharge Delay	7	Menu Level ▶
X DRAM RAS# to CAS# Delay	3	
X DRAM RAS# Precharge	3	
Memory Frequency For	[Auto]	
System BIOS Cacheable	[Enabled]	
Video BIOS Cacheable	[Enabled]	
Memory Hole At 15M-16M	[Disabled]	
Delayed Transaction	[Enabled]	
Delay Prior to Thermal	[16 Min]	
AGP Aperture Size (MB)	[64]	
Init Display First	[PCI Slot]	
TV-Out Mode	[NTSC]	
DRAM Data Integrity Mode	ECC	

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

This chipset settings deal with CPU access to dynamic random access memory (DRAM). The default timings have been carefully chosen and should only be altered if data is being lost. Such a scenario might well occur if your system had mixed speed DRAM chips installed so that greater delays may be required to preserve the integrity of the data held in the slower memory chips.

DRAM Timing Selectable

This option provides DIMM plug-and-play support by serial presence detect (SPD) mechanism via the system management bus (SMBUS) interface.

The choice: Manual, By SPD.

CAS Latency Time

This option controls the number of SCLKs between the time a read command is sampled by the SDRAMs and the time the GMCH samples correspondent data from the SDRAMs.

The choice: 2, 2.5, and 3.

Active to Precharge Delay

This is to DDR standard accordingly.

The choice: 8, 7, 6, and 5.

DRAM RAS# to CAS# Delay

This option controls the number of SCLKs (SDRAM Clock) from a row activate command to a read or write command. If your system installs good quality of SDRAM, you can set this option to "3 SCLKs" to obtain better memory performance. Normally, the option will be set to Auto.

The choice: 4, 3, and 2.

DRAM RAS# Precharge

This option controls the number of SCLKs for RAS# precharge. If your system installs good quality of SDRAM, you can set this option to "3 SCLKs" to obtain better memory performance. It is set to auto normally.

The choice: 4, 3, and 2.

Memory Frequency For

Users are recommended to use Auto for memory frequency selection; Use DDR400 selects Auto.

The choice: DDR266, DDR320, DDR400, and Auto.

System BIOS Cacheable

Selecting Enabled allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

The choice: Enabled, Disabled.

Video BIOS Cacheable

Select "Enabled" to enable caching VGA BIOS into L2 cache to get higher display performance. "Disabled" to ignore this BIOS caching function.

The choice: Enabled, Disabled.

Memory Hole At 15-16M

In order to improve performance, certain space in memory is reserved for ISA cards. This memory must be mapped into the memory space below 16MB.

The choice: Enabled, Disabled.

Delayed Transaction

Select "Enabled" to enable delay transaction. This will enhance performance for data transmission between different PCI buses.

The choice: Enabled, Disabled.

Delay Prior to Thermal

The choice: 4 Min, 8 Min, 16 Min, and 32 Min.

AGP Aperture Size (MB)

The choice: 4, 8, 16, 32, 64,128, and 256.

Init Display First

This item allows you to select the first display port to be initialized.

The choice: PCI Slot & Onboard VGA.

TV-Out Mode

The choice: NTSC, PAL, PAL-M, PAL-N.

DRAM Data Integrity Mode

4.7 Integrated Peripherals

Phoenix- AwardBIOS CMOS Setup Utility
Integrated Peripherals

▶ OnChip IDE Device	[Press Enter]	Item Help
▶ Onboard Device	[Press Enter]	
▶ Super IO Device	[Press Enter]	Menu Level ▶

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Phoenix- AwardBIOS CMOS Setup Utility
OnChip IDE Device

IDE HDD Block Mode	[Enabled]	Item Help
IDE DMA transfer access	[Enabled]	
On-Chip Primary PCI IDE	[Enabled]	
IDE Primary Master PIO	[Auto]	Menu Level ▶
IDE Primary Slave PIO	[Auto]	
IDE Primary Master UDMA	[Auto]	If your IDE hard drive supports block mode select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support
IDE Primary Slave UDMA	[Auto]	
On-Chip Secondary PCI IDE	[Enabled]	
IDE Secondary Master PIO	[Auto]	
IDE Secondary Slave PIO	[Auto]	
IDE Secondary Master UDMA	[Auto]	
IDE Secondary Slave UDMA	[Auto]	
*** On-Chip Serial ATA Setting ***		
On-Chip Serial ATA	[Disabled]	
X Serial ATA Port0 Mode	Primary Master	
Serial ATA Port1 Mode	Primary Slave	

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

IDE HDD Block Mode

If your IDE hard drive supports block mode select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support.

The choice: Enabled, Disabled.

IDE DMA transfer access

The choice: Enabled, Disabled.

OnChip Primary/Secondary PCI IDE

The chipset contains a PCI IDE interface with support for two IDE channels. Select Enabled to activate the primary IDE interface. Select Disabled to deactivate this interface.

The choice: Enabled, Disabled.

IDE Primary/Secondary Master/Slave PIO

The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

The choice: Auto, Mode 0, Mode 1, Mode 2, Mode 3, and Mode 4.

IDE Primary/Secondary Master/Slave UDMA

Ultra DMA/33/66/100 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/33/66/100, select Auto to enable BIOS support.

The choice: Auto, Disabled.

On-Chip Serial ATA

Disabled	Disabled SATA Controller
Auto	Auto arrange by BIOS
Combined Mode	PATA and SATA are combined. Max. Of 2 IDE drives in each Channel
Enhanced Mode	Enable both SATA and PATA. Max. Of 6 IDE drives are Supported
SATA Only	SATA is operating in legacy mode

Phoenix- AwardBIOS CMOS Setup Utility
Onboard Device

USB Controller	[Enabled]	Item Help
USB 2.0 Controller	[Enabled]	
USB Keyboard Support	[Enabled]	Menu Level ▶
USB Mouse Support	[Disabled]	
AC97 Audio	[Auto]	
CSA LAN (Giga-LAN)	[Enabled]	

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

USB Controller

This item allows you to enable/disable USB (Universal Serial Bus) function.

The choice: Enabled, Disabled.

USB 2.0 Controller

This entry is for disable/enable EHCI controller only. This BIOS itself may/may not have high speed USB support built in, the support will be automatically turn on when high speed device were attached.

The choice: Enabled, Disabled.

USB Keyboard Support

This item allows you to enable USB keyboard function under POST, BIOS setup menu, DOS, or Windows-NT with no USB driver loaded.

The choice: Enabled, Disabled.

USB Mouse Support

This item allows you to enabled USB Mouse function under POST, BIOS Setup menu, DOS, or Window-NT with no USB driver loaded.

The choice: Enabled, Disabled.

AC97 Audio

Users can disable on board AC97 Audio function.

The choice: Auto, Disabled.

CSA LAN (Giga-LAN)

This item allows you to Enable/Disable LAN function.

The choice: Enabled, Disabled.

Phoenix- AwardBIOS CMOS Setup Utility
Super IO Device

POWER ON Function	[BUTTON ONLY]	Item Help
X KB Power ON Password	Enter	
X Hot Key Power ON	Ctrl-F1	Menu Level ▶
Onboard FDC Controller	[Enabled]	
Onboard Serial Port 1	[3F8/IRQ4]	
Onboard Serial Port 2	[2F8/IRQ3]	
UART Mode Select	[Normal]	
X RxD, TxD Active	Hi, Lo	
X IR Transmission Delay	Enabled	
X UR2 Duplex Mode	Half	
X Use IR Pins	IR-Rx2Tx2	
Onboard Parallel Port	[378/IRQ7]	
Parallel Port Mode	[SPP]	
X EPP Mode Select	EPP1.7	
X ECP Mode Use DMA	3	
Watch Dog Timer Select	[Disabled]	

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Power On Function

This item allows you to select different power on scheme using ATX power supply.

Password	Power on using customized password string
Hot Key	Power on using special customized key
Mouse Left	Power on using mouse left click
Mouse Right	Power on using mouse right click
Any Key	Power on using any keyboard key
Button Only	Power on by power Button
Keyboard 98	Power on by keyboard 98 [Only power ON/OFF key]

Keyboard Power On Password

In the event of "Power On Function" being configured as "Password", this item will be enabled for tuning. Press "Enter" key to enter a customized password, and confirm again when being asked. In the case that the confirmed password does not match the configured one, the message of "Password Disabled – Press any key to continue…" will be prompted.

Hot Key Power On

In the event of "Power On Function" being configured as "Hot Key", this item will be enabled for tuning.

The choice: Ctrl-F1 to Ctrl-F12.

Onboard FDC Controller

This item allows you to enable/disable onboard Floppy disk controller.

The choice: Enabled, Disabled.

Onboard Serial Port 1/Port 2

Select an address and corresponding interrupt for the first and second serial ports.

The choice: Disabled, 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, and Auto.

UART Mode Select

This item allows users to select Infrared transmission mode.

Normal	Disable Infrared function
IrDA	Select IrDA mode transmission
ASKIR	Select ASKIR mode transmission

As Infrared transmission function shares onboard serial port 2, COM2 needs to be enabled.

RxD, TxD Active

This item is to configure Infrared transmission rate. Four options are available :

Hi, Hi	High rate for receiving / High rate for transmitting
Hi, Lo	High rate for receiving / Low rate for transmitting
Lo, Hi	Low rate for receiving / High rate for transmitting
Lo, Lo	Low rate for receiving / Low rate for transmitting

IR Transmission Delay

This option will be available when IR is enabled.

The choice: Enabled, Disabled.

UR2 Duplex Mode

The available choices are full duplex mode and half duplex mode

The choice: Full, Half.

Use IR Pins

The available choices are IR-Rx2Tx2/ RxD2, TxD2.

The choice: IR-Rx2Tx2 / RxD2, TxD2.

Onboard Parallel Port

This item allows you to configure I/O address of the onboard parallel port.

The choice: Disabled, 378/IRQ7, 278/IRQ5, and 3BC/IRQ7.

Parallel Port Mode

There are four different modes for the onboard parallel port:

SPP	Switch to SPP mode
EPP	Switch to EPP mode
ECP	Switch to ECP mode
ECP + EPP	Switch to ECP + EPP mode
Normal	Switch to Normal mode

EPP Mode Select

Select different version of EPP mode.

The choice: EPP1.7, EPP1.9.

ECP Mode Use DMA

Select a proper DMA channel for ECP mode.

The choice: 1, 3.

Watch Dog Timer Select

This BIOS testing option is able to reset the system according to the selected table.

The choice: Disabled, 10 Sec, 20 Sec, 30 Sec, 40 Sec, 1 Min, 2 Min, and 4 Min.

4.8 Power Management Setup

The Power Management Setup allows you to configure you system to most effectively save energy while operating in a manner consistent with your own style of computer use.

Phoenix- AwardBIOS CMOS Setup Utility
Power Management Setup

ACPI Function	[Enabled]	Item Help
ACPI Suspend Type	[S1(POS)]	
X Run VGABIOS if S3 Resume	No	Menu Level ▶
Power Management	[User Define]	
Video Off Method	[DPMS]	
Video Off In Suspend	[Yes]	
Suspend Type	[Stop Grant]	
Suspend Mode	[Disabled]	
HDD Power Down	[Disabled]	
Soft-Off by PWR-BTTN	[Instant-Off]	
PWRON After PWR-Fail	[Off]	
CPU THRM-Throttling	[50.0%]	
Wake Up On LAN1	[Disabled]	
Power On by Ring	[Disabled]	
X USB KB Wake-Up From S3	Disabled	
Resume by Alarm	[Disabled]	
X Date(of Month) Alarm	0	
X Time(hh:mm:ss) Alarm	0 : 0 :0	
** Reload Global Timer Events **		
Primary IDE 0	[Disabled]	
Primary IDE 1	[Disabled]	
Secondary IDE 0	[Disabled]	
Secondary IDE 1	[Disabled]	
FDD,COM,LPT Port	[Disabled]	
PCI PIRQ[A-D]#	[Disabled]	

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

ACPI Function

This item allows you to enable/disable the Advanced Configuration and Power Management (ACPI).

The choice: Enabled, Disabled.

ACPI Suspend Type

To decide which ACPI suspend mode to use.

The choice: S1(POS), S3(STR).

Run VGA BIOS if S3 Resume

The choice: Auto, Yes, No.

Power Management

This category allows you to select the type (or degree) of power saving and is directly related to "HDD Power Down", "Suspend Mode".

There are three selections for Power Management, three of which have fixed mode settings.

Min. Power Saving	Minimum power management. Suspend Mode = 1 Hour, and HDD Power Down = 15 Min.
Max. Power Saving	Maximum power management. Suspend Mode = 1 Min., and HDD Power Down = 1 Min.
User Defined	Allow you to set each mode individually. When not disabled, Suspend Mode ranges from 1 min. to 1 Hour and HDD Power Down ranges from 1 Min. to 15 Min.

Video Off Method

This determines the manner in which the monitor is blanked.

V/H SYNC+Blank	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
Blank Screen	This option only writes blanks to the video buffer.
DPMS	Initial display power management signaling.

Video Off In Suspend

This allows user to enable/disable video off in Suspend Mode.

The choice: Yes, No.

Suspend Type

Two options are available: Stop Grant and PwrOn Suspend.

The choice: Stop Grant, PwrOn Suspend.

Suspend Mode

When enabled and after the set time of system inactivity, all devices except the CPU will be shut off.

The choice: Disabled, 1 Min, 2 Min, 4 Min, 8 Min, 12 Min, 20 Min, 30 Min, 40 Min, and 1 Hour.

HDD Power Down

When enabled and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

The choice: Disabled, 1 Min, 2 Min, 3 Min, 4 Min, 5 Min, 6 Min, 7 Min, 8 Min, 9 Min, 10 Min, 11 Min, 12 Min, 13 Min, 14 Min, 15 Min.

Soft-Off by PWR-BTTN

This item allows users to set the time to remove the power after the power button is pressed.

The choice: Instant-Off, Delay 4 Sec.

PWRON After PWR-Fail

This item allows user to configure the power status of using ATX power supply after a serious power loss occurs.

On	System automatically restores power back
Off	System stays at power –off

CPU THRM-Throttling

When the CPU temperature reaches the preset standard. The CPU usage will be reduced to a selected level to avoid overheating.

The choice: 75.0%, 50.0%, and 25.0%.

Wake Up On LAN1

This option can be enabled to support Wake Up by on-board LAN1.

The choice: Disabled, Enabled.

Power On by Ring

When select "Enabled", a system that is at soft-off mode will be alert to Wake-On-Modem signal.

The choice: Enabled, Disabled.

USB KB Wake-up From S3

The choice: Enabled, Disabled.

Resume by Alarm

This item allows users to enable/disable the resume by alarm function. When "Enabled" is selected, system using ATX power supply could be powered on if a customized time and day is approached.

The choice: Enabled, Disabled.

Date(of Month) Alarm

When "Resume by Alarm" is enabled, this item could allow users to configure the date parameter of the timing dateline on which to power on the system.

The choice: 0 ~ 31.

Time(hh:mm:ss) Alarm

When "Resume by Alarm" is enabled, this item could allow users to configure the time parameter of the timing dateline on which to power on the system.

The choice: hh (0~23), mm (0~59), ss (0 ~59).

Primary/Secondary IDE 0/1

This item is to configure IDE devices being monitored by system so as to keep system out of suspend mode if the associated device is busy.

The choice: Enabled, Disabled.

FDD, COM, LPT Port

This item is to configure floppy device, COM ports, and parallel port being monitored by system so as to keep system out of suspend mode if the associated device is busy.

The choice: Enabled, Disabled.

PCI PIRQ[A-D]#

This option can be used to detect PCI device activities. If they are activities, the system will go into sleep mode.

The choice: Enabled, Disabled.

4.9 PnP/PCI Configurations

This section describes configuring the PCI bus system. PCI, or **P**ersonal **C**omputer **I**nterconnect, is a system, which allows I/O devices to operate at speeds nearing the speed the CPU itself, uses when communicating with its own special components.

This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

Phoenix- AwardBIOS CMOS Setup Utility
PnP/PCI Configurations

Reset Configuration Data	[Disabled]	Item Help
Resources Controlled By	[Auto(ESCD)]	Menu Level ▶
X IRQ Resources	Press Enter	
PCI/VGA Palette Snoop	[Disabled]	Default is disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the OS cannot boot.
Assign IRQ For VGA	[Enabled]	
INT Pin 1 Assignment	[Auto]	
INT Pin 2 Assignment	[Auto]	
INT Pin 3 Assignment	[Auto]	
INT Pin 4 Assignment	[Auto]	
INT Pin 5 Assignment	[Auto]	
INT Pin 6 Assignment	[Auto]	
INT Pin 7 Assignment	[Auto]	
INT Pin 8 Assignment	[Auto]	

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Reset Configuration Data

Default is disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the OS cannot boot.

The choice: Enabled, Disabled.

Resource Controlled By

BIOS can automatically configure the entire boot and plug and play compatible devices. If you choose Auto, you cannot select IRQ DMA and memory base address fields, since BIOS automatically assigns them.

The choice: Auto (ESCD), Manual.

IRQ Resources

When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt.

The choice: Press Enter.

Legacy ISA for devices compliant with the original PC AT bus specification, PCI/ISA PnP for devices compliant with the plug and play standard whether designed for PCI or ISA bus architecture

IRQ-3/IRQ-4/IRQ-5/IRQ-7/IRQ-9/IRQ-10/IRQ-11/IRQ-12/IRQ-14/IRQ-15 assigned to.

The choice: PCI Device, Reserved.

PCI/VGA Palette Snoop

The choice: Enabled, Disabled.

Assign IRQ For VGA

To enable VGA IRQ assignation by selecting enabled.

The choice: Enabled, Disabled.

INT Pin 1 Assignment

Devices (S) using this INT: Display Cntrlr – Bus 1 Dev 0 Func 0, USB 1.0/1.1 UHCI Cntrlr – Bus 0 Dev29 Func 0.

The choice: Auto, 3, 4, 5, 7, 9, 10, 11, 12, 14, and 15.

INT Pin 2 Assignment

Devices (S) using this INT: Multimedia Device – Bus 0 Dev 31 Func 5, Simple COMM. Cntrlr – Bus 0 Dev 31 Func 6, SMBus Cntrlr – Bus 0 Dev 31 Func 3.

The choice: Auto, 3, 4, 5, 7, 9, 10, 11, 12, 14, and 15.

INT Pin 3 Assignment

Devices (S) using this INT: IDE Cntrlr – Bus 0 Dev 31 Func 2, Network Cntrlr – Bus 2 Dev 1 Func 0.

The choice: Auto, 3, 4, 5, 7, 9, 10, 11, 12, 14, and 15.

INT Pin 4 Assignment

Devices (S) using this INT: Network Cntrlr – Bus 4 Dev 10 Func 0, USB 1.0/1.1 UHCI Cntrlr – Bus 0 Dev 29 Func 1.

The choice: Auto, 3, 4, 5, 7, 9, 10, 11, 12, 14, and 15.

INT Pin 5 / 6 / 7 Assignment

Devices (S) using this INT:

The choice: Auto, 3, 4, 5, 7, 9, 10, 11, 12, 14, and 15.

INT Pin 8 Assignment

Devices (S) using this INT: USB 2.0 EHCI Cntrlr – Bus 0 Dev 29 Func 7.

The choice: Auto, 3, 4, 5, 7, 9, 10, 11, 12, 14, and 15.

4.10 PC Health Status

Phoenix- AwardBIOS CMOS Setup Utility
PC Health Status

CPU Throttle Temperature	[Disabled]	Item Help
External Temperature	0℃/ 32℉	
Current CPU Temperature	42℃/107℉	Menu Level ▶
Current CPU FAN Speed	4693 RPM	
Current Power FAN Speed	0 RPM	
Current System FAN Speed	0 RPM	
CPU Vcore	1.39 V	
+3.3V	3.32 V	
+5V	5.13 V	
+12V	12.09 V	
-12V	- 12.44 V	
VBAT (V)	4.93 V	
5VSB (V)	5.06 V	

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

CPU Throttle Temperature

This item allows you to set a temperature above, whom the system will operate, in lower speed immediately. Default setting is disabled.

The choice: Disabled, 56℃/133℉, 60℃/140℉, 66℃/151℉, 70℃/158℉.

4.11 Frequency/Voltage Control

Phoenix- AwardBIOS CMOS Setup Utility
PC Health Status

Spread Spectrum	[Disabled]	Item Help
		Menu Level ▶
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

Spread Spectrum

This item allows you to disable/enable the spread spectrum modulate

The choice: Disabled, Enabled.

4.12 Default Menu

Selecting "Defaults" from the main menu shows you two options, which are described below

Load Fail-Safe Defaults

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Fail-Safe Defaults (Y/N) ? N

Pressing 'Y' loads the BIOS default values for the most stable, minimal-performance system operations.

Load Optimized Defaults

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Optimized Defaults (Y/N) ? N

Pressing 'Y' loads the default values that are factory settings for optimal performance system operations.

4.13 Supervisor/User Password Setting

You can set either supervisor or user password, or both of then. The differences between are:

Set Supervisor Password : can enter and change the options of the setup menus.

Set User Password : just can only enter but do not have the right to change the options of the setup menus. When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

ENTER PASSWORD

Type the password, up to eight characters in length, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To disable a password, just press <Enter> when you are prompted to enter the password. A message will confirm the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

PASSWORD DISABLED

When a password has been enabled, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

Additionally, when a password is enabled, you can also require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your computer.

You determine when the password is required within the BIOS Features Setup Menu and its Security option (see Section 3). If the Security option is set to “System”, the password will be required both at boot and at entry to Setup. If set to “Setup”, prompting only occurs when trying to enter Setup.

4.14 Exiting Selection

Save & Exit Setup

Pressing <Enter> on this item asks for confirmation:

Save to CMOS and EXIT (Y/N)? Y

Pressing "Y" stores the selections made in the menus in CMOS – a special section of memory that stays on after you turn your system off. The next time you boot your computer, the BIOS configures your system according to the Setup selections stored in CMOS. After saving the values the system is restarted again.

Exit Without Saving

Pressing <Enter> on this item asks for confirmation:

Quit Without Saving (Y/N)? N

This allows you to exit Setup without storing in CMOS any change. The previous selections remain in effect. This exits the Setup utility and restarts your computer.

Chapter 5
Troubleshooting

This chapter provides a few useful tips to quickly get ROBO-8714VG2A running with success. As basic hardware installation has been addressed in Chapter 2, this chapter will primarily focus on system integration issues, in terms of BIOS setting, and OS diagnostics.

5.1 Hardware Quick Installation

Backplane

ROBO-8714VG2A is a full-sized Signal Board Computer, and it not only supports PCI/ISA backplane but also PCI 64 bits and PCI-X, which can rapidly increase the performance of your system. To know whether your backplane is PICMG PCI/ISA backplane and whether it supports PCI-X, please contact our vendor or us.

P4 Power connector

ROBO-8714VG2A requires power drawing from at least one or two power connectors (J1 and J7), depending on power mode (AT or ATX). The CPU supplementary Power Connector (J1) has to be connected to a system all the time no matter using AT or ATX mode. Otherwise, the system won't boot up properly. In addition, the 4-pin connector (J9) is only required at ATX mode due to the fact that 4-pin connector provides 5V Stand-by from the backplane to the SBC. If J1 isn't connected, it could also cause system failed to boot up.

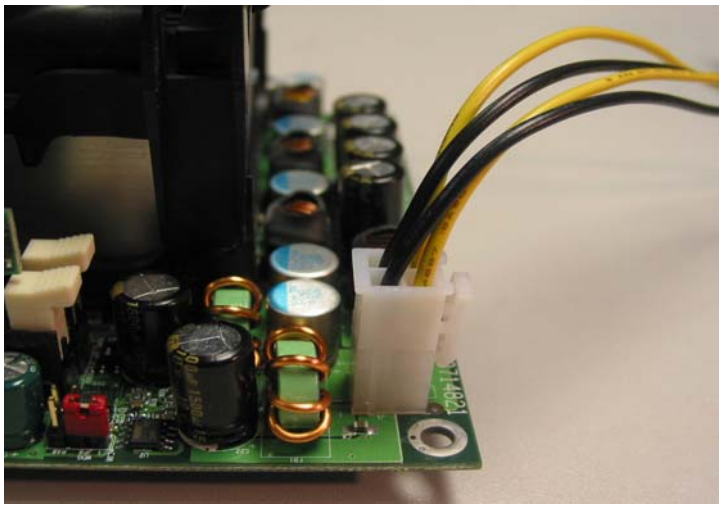


Figure 5-1

ATX Power Setting

This section would be more likely to introduce you how to set up ATX mode on your ROBO-8714VG2A. Please refer to the following instruction.

Step 1: Remove the jumper on pin 3 and 4 of ATX P/S control connector on backplane, and then use 4-pin power cable to connect both ATX P/S Control Connector on backplane and ATX Power Control (J9) on Signal Board Computer. (Figure 5-2)

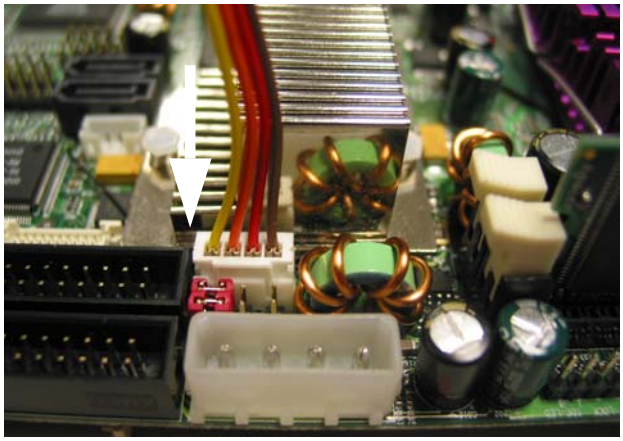


Figure 5-2

Step 2: Please adjust AT/ATX Jumper on JP1 to short 3-5, 4-6 pins, then it can support ATX power scheme. (Figure 5-3)

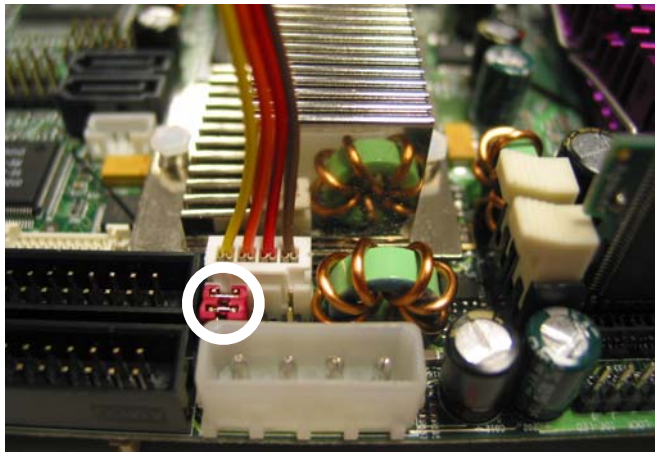


Figure 5-3

Step 3: Please connect 12 Power to CPU supplementary Power Connector (J1), which shows on Figure 5-1.

Step 4: Connect TOGGLE SWITCH with J8 connector on ROBO-8714VG2A (Figure 5-4), which is used to power on ATX Power Supply. Generally, the TOGGLE SWITCH is located on the chassis of front panel.

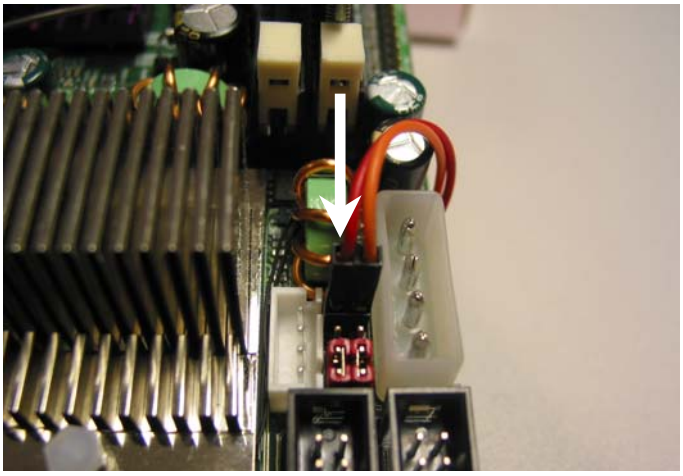


Figure 5-4

AT Power Setting

This section will introduce you how to quickly and appropriately set up AT power on your system.

Step 1: Please adjust AT/ATX Jumper on JP1 to short 1-3, 2-4 pins, then it can support AT power scheme. (Figure 5-5)

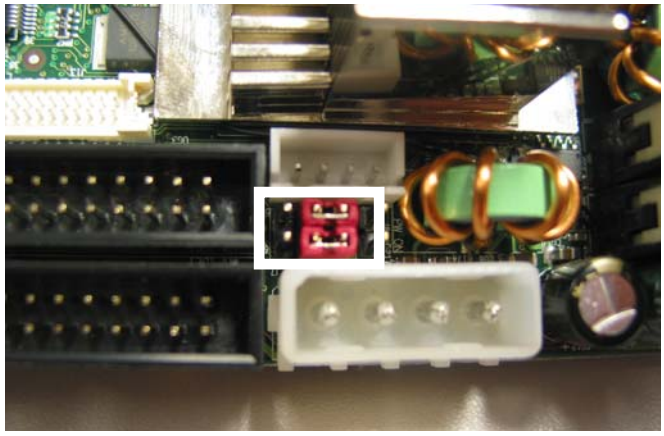


Figure 5-5

Note:
If you currently used ATX mode, please clean CMOS first before adjusting Power setting to AT mode. Otherwise, system would not boot up properly.

Step 2: If currently using ATX mode, please remove 4 pins power cable, and then put a jumper back on pin 3 (PS-ON) and pin 4 (GND) of backplane ATX P/S control connector. (Figure 5-6)

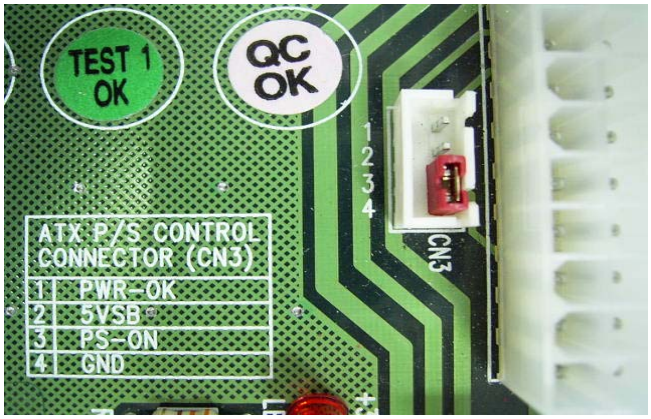


Figure 5-6

Step 3: Please connect 12 V Power to CPU supplementary Power Connector (J1), which shows on Figure 5-1.

Stand-alone Setting

The purpose of system stand-alone function is to identify the root cause by isolating the board from other possible system devices such as PCI device, backplane, and so on. Please refer the following steps to make system at stand-alone status.

Step 1: Please connect 4 pins power to J7 in order to make system stand-alone (See Figure 5-7)

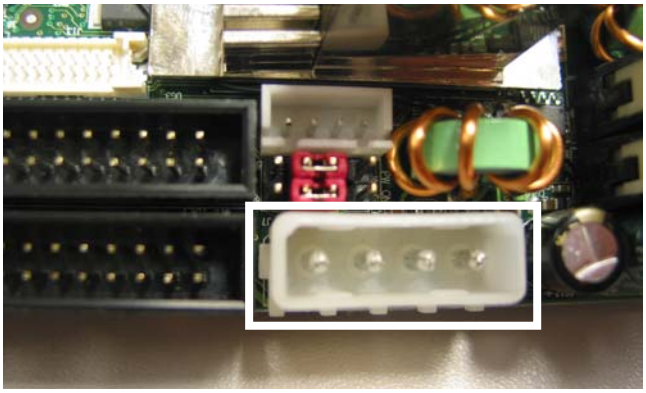


Figure 5-7

Step 2: Please connect 12 Power to CPU supplementary Power Connector (J1), which shows on Figure 5-1.

Step 3: If you are using ATX power, please short PS-ON and Ground on ATX power connector (As Figure 5-8), and turn on AC power switch of ATX power supply to let system boot up. If you are using AT power supply, you can simply turn on the power on AT power supply to boot up the system.

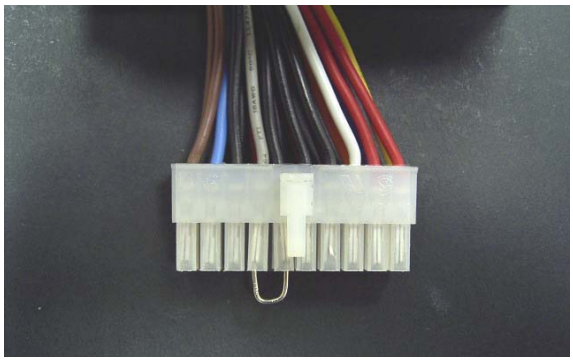


Figure 5-8

Note:
Due to the fact that different power supply has different definition of pin assignments. Therefore, please check Pin assignment on Power Supply or ask your vendor.

Serial ATA Hard Disk Setting
Unlike IDE bus, each Serial ATA channel can only connect to one SATA hard disk at a time; there are total two connectors, J11 and J12. The installation of Serial ATA is simpler and easier than IDE, because SATA hard disk doesn't require setting up Master and Slave, which can reduce mistake of hardware installation. All you need to do is to plug in two cables and enable SATA in System BIOS. (The Serial ATA hard disk of installation, please see figure 5-9 as below)

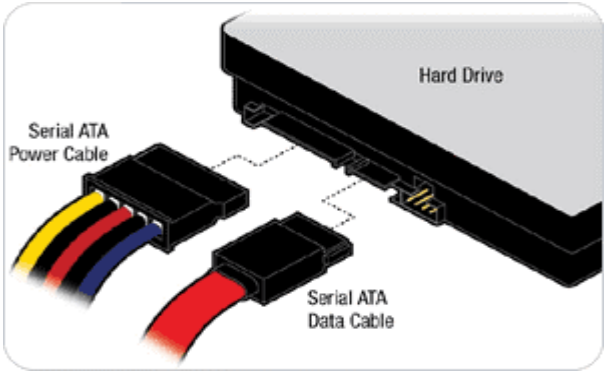
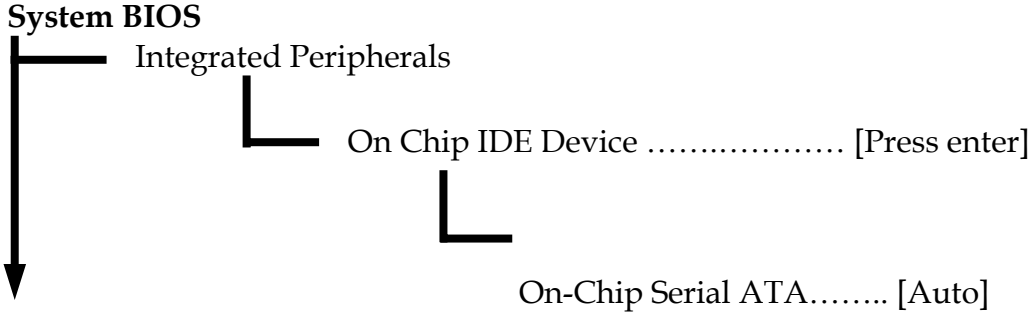


Figure 5-9

After done with the installation of SATA hardware, please enter system BIOS to enable Serial ATA function. Otherwise, Serial hardware won't be recognized. To enable SATA function, please see as following:



5.2 BIOS Setting

It is assumed that users have correctly adopted modules and connected all the devices cables required before turning on AT or ATX power. CPU, CPU Fan, 184-pin DDR SDRAM, keyboard, mouse, floppy drive, IDE hard disk, printer, VGA connector, device cables, ATX accessories or 12V 4-pin power cable are good examples that deserve attention. With no assurance of properly and correctly accommodating these modules and devices, it is very possible to encounter system failures that result in malfunction of any device.

To make sure that you have a successful start with ROBO-8714VG2A, it is recommended, when going with the boot-up sequence, to hit "DEL" key and enter the BIOS setup menu to tune up a stable BIOS configuration so that you can wake up your system far well.

Loading the default optimal setting

When prompted with the main setup menu, please scroll down to "**Load Optimal Defaults**", press "Enter" and "Y" to load in default optimal BIOS setup. This will force your BIOS setting back to the initial factory configuration. It is recommended to do this so you can be sure the system is running with the BIOS setting that Portwell has highly endorsed. As a matter of fact, users can load the default BIOS setting any time when system appears to be unstable in boot up sequence.

Auto Detect Hard Disks

In the BIOS => Standard CMOS setup menu, pick up any one from Primary/Secondary Master/Slave IDE ports, and press "Enter". Setup the selected IDE port and its access mode to "Auto". This will force system to automatically pick up the IDE devices that are being connected each time system boots up.

Improper disable operation

There are too many occasions where users disable a certain device/feature in one application through BIOS setting. These variables may not be set back to the original values when needed. These devices/features will certainly fail to be detected.

When the above conditions happen, it is strongly recommended to check the BIOS settings. Make sure certain items are set as they should be. These include the floppy drive, COM1/COM2 ports, Parallel port, USB ports, external cache, on-board VGA and Ethernet.

It is also very common that users would like to disable a certain device/port to release IRQ resource. A few good examples are

Disable COM1 serial port to release IRQ #4
Disable COM2 serial port to release IRQ #3
Disable Parallel port to release IRQ #7
Disable PS/2 mouse to release IRQ #12,
Etc…

A quick review of the basic IRQ mapping is given below for your reference.

IRQ#	Description
IRQ #0	System Timer
IRQ #1	Keyboard
IRQ #2	Unassigned
IRQ #3	COM2
IRQ #4	COM1
IRQ #5	ATI VGA Controller
IRQ #6	Floppy Disk Controller
IRQ #7	Parallel port
IRQ #8	Real-time Clock
IRQ #9	Microsoft ACPI-Compliant System
IRQ #10	Network Controller
IRQ #11	Network Controller
IRQ #12	PS/2 mouse
IRQ #13	Data Processor
IRQ #14	Primary IDE Controller
IRQ #15	Secondary IDE Controller

It is then very easy to find out which IRQ resource is ready for additional peripherals. If IRQ resource is not enough, please disable some devices listed above to release further IRQ numbers.

5.3 FAQ

Unboot problem

Symptom: After changing power mode from ATX to AT, my system is just not working.

Solution: Due to the fact that the 6300ESB design is for ATX. Therefore, when you change your power mode from ATX to AT or from AT to ATX, please make sure you clean your CMOS in order to make your system boot up properly. To clean CMOS, please short 2-3 pins on JP4 for a moment, and then change it back to its default setting.

Symptom:SBC keeps beeping, and no screen has shown.

Solution: In fact, each beep sound represents different definition of error message. Please refer to table as following:

Beep sounds	Meaning	Action
One long beep with one short beeps	DRAM error	Change DRAM or reinstall it
One long beep constantly	DRAM error	Change DRAM or reinstall it
One long beep with two short beeps	Monitor or Display Card error	Please check Monitor connector whether it inserts properly
Beep rapidly	Power error warning	Please check Power mode setting

Symptom:There is neither no beeps nor screen output.

Solution: Indeed, you can do the stand-alone to identify the root cause by isolating the board from other possible system devices such as PCI device, backplane, and so on. If the system still cannot boot up, please fill out RMA from which is provides on Portwell website, and then send back to Portwell as a RMA. Besides, you also visit RMA site (http://www.portwell.com.tw/rma/login.asp) to check RMA report if necessary.

Installation Problem

Question: Can I use PICMG 1.0 backplane with ROBO-8714VG2A?

Answer: Yes, but please make sure that JP5 is open.

Question: I use 64 bits PCI card, but the performance isn't as good as I expected. Why?

Answer: Please make sure if you have set JP6, PCI 66/33Mhz selection, to Open in order to have better performance.

Question: After done with installation of SATA hard disk device, why does system BIOS show nothing on screen?

Answer: As matter of fact, you need to access system BIOS to enable SATA device. (Please refer to SATA hard disk device installation guide)

Question: After inserting Compact Flash, why doesn't it work at all?

Answer: Compact Flash is occupied with the master device of IDE Secondary. If there is any device occupying this channel, please remove it or set it as a slave device.

Question: I am using an ATA-66 (or 100) hard drive, how can I know that ATA-66 function is enabled?

Answer: You need to use the 80-pin ATA-66 IDE flat cable to have this function. During the Post stage, you can see ATA-66 (or 100) message while hard drive is being detected. Besides, after successfully installing Microsoft series OS, you also need to install ATA-66/100 driver to active ATA-66/100 function.

Information & Support

Question: I have one IDE hard disk and one SATA hard disk. How can I assign SATA hard disk as First boot device?

Answer: After entering system BIOS, access Advanced BIOS Feature. And then press enter on Hard disk boot Priority. You will see the mode of your SATA hard disk. Select it as first boot device.

Besides, please also notice. Every time, when your hard disk devices have been changed, system bios will ask you to re-setup Hard disk boot priority.

Question: Intel 875 series Chipset supports Dual Channel Mode, but how can I enable this function?

Answer: Indeed, you don't have to change any setting. You can simply plug in two DDR RAM Module, and then system will automatically enable Dual Channel Mode.

Question: Why does my system crash while installing Win NT 4.0? How can I solve this problem?

Answer: That's because Prescott CPU isn't supported by Win NT 4.0. Therefore, please go to BIOS menu and enable "**Limit CPUID MaxVal**" in CPU Feature of Advanced BIOS Features.

Question: I am interested in integrating LCD Panel with ROBO-8714VG2A for my project. How can I get the support from Portwell?

Answer: If you have no preference of LCD panel, please kindly contact our account sale, we will provide high quality, long longevity, and ready solution LCD Panel kits to you, which will reduce your effort and time. If you have the preference of LCD Panel, please contact our account sale or vendor with datasheet of LCD Panel.

Question:Why cannot I install USB 2.0 driver?

Answer: If you are using Windows 2000, you need to update your Service-Pack version to Service-Pack 4. If you are using Windows XP, you need to update Service-Pack to Service Pack 1 at least.

Question: After installing ISA card, why isn't it working?

Answer: As a matter of fact, some ISA cards need to occupy shadow memory, which might case ISA card malfunction. In order to determine it is a lack of shadow memory problem, please disable USB controller and on board LAN. After disabling these two devices, ISA card works. The lack of shadow memory could be a case.
To solve this problem, you can download BIOS from our website
http://www.portwell.com.tw/download.asp

If you cannot find BIOS that you need, please contact with Technical Support Department to request a new BIOS to solve this problem.
Technical Support Department
Mailto: tsd@mail.portwell.com.tw

Question: Why does my system hang up after plugging SCSI or RAID card?

Answer: Like above last question, this might be the lack of shadow memory issue as well. To identify if this is the shadow memory issue, you can disable USB controller and on board LAN in BIOS to see if this is the case. However, this is the case and your card must use the same memory address as either USB controller or on board LAN, please contact us directly Mailto: tsd@mail.portwell.com.tw

Question:I forget my password of system BIOS, what am I supposed to do?

Answer: You can simply short 2-3 pins on JP4 to clean your password.

Note:
For additional technical information, it is not covered in this manual. Please visit our technical web site at http://www.portwell.com.tw

System Memory Address Map

Each On-board device in the system is assigned a set of memory addresses, which also can be identical of the device. The following table lists the system memory address used.

Memory Area	Size	Device Description
0000 – 003F	1K	Interrupt Area
0040 – 004F	0.3K	BIOS Data Area
0050 – 006F	0.5K	System Data
0070 – 03E1	13K	DOS
03E2 – 0CC4B	35K	Program Area
0CC5 – 9F3F	585K	[Available]
= Conventional memory ends at 638K =		
9F40 – 9F7F	1K	Unused
9F80 – 9FFF	2K	Extended BIOS Area
A000 – AFFF	64K	VGA Graphics
B000 – B7FF	32K	Unused
B800 – BFFF	32K	VGA Text
C000 – CFFF	64K	Video ROM
D000 – D3FF	16K	ROM
D400 – EFFF	112K	Unused
DA4A – DFFE	22K	High RAM
HMA	64K	First 64K Extended

Interrupt Request Lines (IRQ)

Peripheral devices can use interrupt request lines to notify CPU for the service required. The following table shows the IRQ used by the devices on board.

IRQ#	Current Use	Default Use
IRQ 0	SMARTDRV	System Timer
IRQ 1	SMARTDRV	Keyboard Event
IRQ 2	[Unassigned]	Usable IRQ
IRQ 3	System ROM	COM 2
IRQ 4	System ROM	COM 1
IRQ 5	[Unassigned]	Usable IRQ
IRQ 6	System ROM	Diskette Event
IRQ 7	[Unassigned]	Usable IRQ
IRQ 8	System ROM	Real-Time Clock
IRQ 9	[Unassigned]	Usable IRQ
IRQ 10	[Unassigned]	Usable IRQ
IRQ 11	[Unassigned]	Usable IRQ
IRQ 12	System ROM	IBM Mouse Event
IRQ 13	System ROM	Coprocessor Error
IRQ 14	System ROM	Hard Disk Event
IRQ 15	VIDE-CDD	Usable IRQ